

F/A-18

HORNET

D&S
VOL. 45
PART 2
PRODUCTION VERSIONS



in detail & scale

Bert Kinzey

DETAIL & SCALE SERIES

The Detail & Scale Series of aviation publications was the first to focus its emphasis on the many physical details of aircraft such as cockpit interiors, radar and avionics equipment, armament, landing gear, and ejection seats. These details and many others are covered more extensively than in any other publications and are presented in the form of close-up photography and line drawings. Special consideration is given to the detail differences between the variants and sub-variants of the aircraft that is covered. These differences are discussed in the text and are illustrated with photographs.

This detailed coverage is supplemented with scale drawings that show five full views. Charts, tables, and an informative text provide extensive amounts of technical data, making this series one of the most complete technical references on aircraft that is available. A brief historical summary is also presented, and it provides the important dates and events in the development and operational life of each aircraft.

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For scale modelers, a complete modelers section is provided that reviews all of the presently available scale model kits of the aircraft or ship, and it also covers the after-market decals that can be obtained for these kits.

The Detail & Scale Series is detailed, technical, and accurate, providing the most comprehensive coverage of this type that is available in military publications.

ABOUT THE AUTHOR

Bert Kinzey, author and President of Detail & Scale, Inc., graduated from Virginia Tech in 1968 with a degree in Business Administration. Upon his graduation he was commissioned a second lieutenant in the U. S. Army, and was sent to the Army's Air Defense School at Fort Bliss, Texas. During his eight years as an officer, Bert commanded a Hawk guided missile battery just south of the DMZ in Korea, and later originated, wrote, and taught classes on the Soviet air threat, military airpower, air defense suppression, and aircraft identification at Fort Bliss. It was during this time that Bert did his first writing. Being dissatisfied with the existing manuals and other materials available for his classes, he wrote his own reference books and other publications. Although he only intended for these to be used in his classes, they were soon placed on the Army's publication list and distributed



throughout the military.

In 1976, Bert resigned from active duty, but his reputation for being knowledgeable about all aspects of military airpower soon led to his taking a civilian position as a subject matter expert with the Department of the Army. His primary responsibility was to develop a new program to teach aircraft identification to the operators of various ground-based air defense weapons systems.

It was during this time that Bert started Detail & Scale as a part time business to produce a new series of books on military aircraft. These books became so successful that Bert soon resigned from his position with the Department of the Army and began writing full time. He has since added ships to his well known Detail & Scale Series, and has begun a second series called Colors & Markings. Bert has written numerous books and magazine articles, and has been a guest on radio talk shows discussing military aircraft and world airpower. He has also served as a technical consultant to companies who have a need for expertise on military aircraft.

Today Bert is a well known aviation writer who gives frequent presentations and speeches about military aviation when he is not busy writing and editing an average of eight books per year. He is an avid modeler and is member of the International Plastic Modelers Society (IPMS). At one of its national conventions, IPMS/USA presented Bert with a special award in recognition of his contributions to the society. As a military photographer, Bert travels extensively to take pictures of aircraft and ships, and has assembled one of the largest collections of military-related photographs in the world. He is a member of the Aviation and Space Writers Association, the American Institute of Aeronautics and Astronautics, and he is a licensed pilot. Bert and his wife, Lynda, live near Atlanta, Georgia, and have two grown children, Janet and Chip.

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Several individuals made very significant contributions and spent a considerable amount of time and effort to help provide the very detailed coverage included in this publication. The author expresses a very special thanks to the following people. GSGT Bruce Martin, USMC, of VFA-106 provided assistance during the time many of the detailed photographs in this book were taken. As a Hornet avionics technician, GSGT Martin provided valuable information about the Hornet's details. Jim Rotramel contributed important photographs from his own files and arranged for the release of additional photographs from the U. S. Navy at NAS Patuxent River Maryland. He also did a considerable amount of research that provided technical information about the Hornet and its systems. Mick Roth also contributed valuable technical information and made a special visit to VMFA (AW)-225 at MCAS El Toro, California, to take a number of important photographs. Among these are the photographs that appear on page 37. To our knowledge, these are the only pictures that have been published to date which show the night attack configuration in the rear cockpit of an F/A-18D. LT Matt Soltis, USMC, of VMFA (AW)-225 was also especially helpful in arranging access to that unit's F/A-18Ds including the rear cockpits. Finally, a very special thanks is due Bert Byers, the Public Affairs Officer at NAS Cecil Field, Florida. It was through his efforts and personal assistance that arrangements were made so that detailed access to all variants of the Hornet could be attained.

Many photographs in this publication are credited to their contributors. Photographs with no credit indicated were taken by the author.

Front cover: F/A-18C, 163467, carries CAG markings for CVW-1 and VFA-82 which is assigned to the USS AMERICA. It is armed with Harpoon anti-ship missiles and Sparrow and Sidewinder air-to-air missiles as well as its internal cannon. An external fuel tank is carried on the centerline station. The aircraft in the background is armed for the air defense suppression mission, and it carries AGM-88 HARM anti-radiation missiles under its wings and a Mk 20 Rockeye cluster bomb on its centerline hardpoint. Sparrow and Sidewinders are also carried for defense against enemy aircraft.

(McDonnell Douglas)

Rear cover: Details of the front cockpit in an F/A-18C are illustrated in this photograph.

(McDonnell Douglas)

INTRODUCTION



"Gear down, flaps down, hook down, all down" is part of the landing checklist as an aircraft approaches a carrier for an arrested recovery. This unusual head-on photograph of an F/A-18A from VFA-97 shows what a Hornet looks like as it prepares to land aboard a carrier. In this case the in-flight refueling probe has also been extended. Note the configuration of the lowered landing gear when the weight of the aircraft is not resting on it.

(Official U. S. Navy photograph)

In 1982, Volume 6 in the Detail & Scale Series became the first book ever published on the F/A-18 Hornet. At that time, this multi-role aircraft was just entering service with the U. S. Navy and Marines while important aspects of its evaluation and testing program still continued. That publication covered the design and development of the aircraft and illustrated all of the prototype, FSD, and early production Hornets in considerable detail. Author Don Linn did a fine job of researching, photographing, and writing about the new aircraft. But even before Volume 6 was released, it was obvious that the Hornet would continue to evolve for many years to come. There would be changes to its airframe, upgrades in its capabilities, and new variants would be developed. Accordingly, that first book on the Hornet was designated "Part 1" of our coverage of the F/A-18, and Detail & Scale promised to release a second part on the production variants.

In this new volume is the most extensive and detailed look at all four production versions of the F/A-18 Hornet ever published. These include the F/A-18A, F/A-18B, F/A-18C, and F/A-18D. Dozens of photographs, most of which were taken specifically for this publication, illustrate every important feature of the aircraft's design. The cockpits of each of the four production variants are illustrated with detailed close-up photography, and this includes both the standard and night attack configurations in the rear cockpit of the F/A-18D. The ejection seats, canopy details, radar, avionics bays, engines, landing gear, internal cannon, and armament are all profusely illustrated. Features and details of the wings, control surfaces, fuselage, and tail section are likewise revealed in scores of photographs. Emphasis is also placed on the differences between the four Hornet variants. Even the smallest physical changes, some of which have never

been identified before in any other reference, are illustrated and described.

The primary purpose of this book is to provide a detailed look at the Hornet's many physical details and features. This is best accomplished through the use of illustrations which are accompanied with informative captions. In order to include as many photographs as possible, a special effort has been made to keep the text to a minimum. However, a summary of the Hornet's continuing development and its operational use in combat is provided. Information is also provided that will correct several important errors concerning the Hornet which have appeared elsewhere.

All new 1/72nd scale five-view drawings of the F/A-18C have been prepared specifically for this publication by well-known aviation researcher, artist, and author Dana Bell. The modeler's section in the back of the book provides an honest appraisal of the F/A-18 Hornet kits that have been released to date. Recommendations are made regarding which kits are the best in each scale, and corrections required for various models are explained. A listing of after-market decals is also included.

As promised in Part 1, this new title in the Detail & Scale Series provides extensive and detailed coverage of the four production variants of the Hornet. But it is already obvious that this will not be the last book in this series on the F/A-18. At McDonnell Douglas, work is proceeding on the larger and more capable F/A-18E and F/A-18F. These new versions will have a redesigned airframe with a longer fuselage and an increased wing span. They will have improved capabilities over the present versions and will surely be the subject of another book in the Detail & Scale Series after they become operational.

HISTORICAL SUMMARY



The F/A-18 Hornet's design was based on the Northrop's YF-17 which lost out to the YF-16 in the U. S. Air Force's lightweight fighter competition. Here, YF-17, 201570, is seen at the 1977 Paris Air Show with F-18 PROTOTYPE lettered on its vertical tails.
(Perinetti via Linn)

In The F-18 Hornet in Detail & Scale, Part 1, Prototype and Early Production Aircraft, Don Linn did an excellent job explaining and providing details about the lineage and development of the Hornet up to the time it entered service with the first training squadron, VFA-125. Although this new book deals with the production variants, it is appropriate to first briefly review the Hornet's development before proceeding on to a look at the history of the F/A-18's service with the U. S. Navy and Marines.

After the war in Korea, the thinking in the United States was to build sophisticated jet fighters equipped with radars, avionics, and weapon systems that would be able to outfight anything that an enemy might put into the air. By virtue of the amount of equipment these combat aircraft had to carry, they were by necessity quite large and heavy. Aircraft like the F-101 Voodoo, F-105, and F-4 Phantom were several times the size and weight of the fighters that had fought in the skies over Korea. This "bigger is better" philosophy continued up through the development of the F-14 and F-15 which are in service today.

In the Soviet Union, fighter development followed a completely different approach. The Soviets built simple, small, and lightweight fighters, but compensated for the lack of sophistication by producing their aircraft in great numbers. Air Force and Navy planners looked down their noses at this and claimed with some degree of truth that the Soviets were forced into this philosophy, because their lack of technology did not permit them to produce large sophisticated fighters.

But in the United States, there was one aircraft manufacturer that believed there was a place for the lightweight fighter, not just to export to foreign nations that could not afford the costly sophisticated aircraft, but within the U. S. military as well. That company was Northrop, and it became well known for its excellent lightweight F-5 series of fighters. Although Northrop received substantial orders for the F-5 from a considerable number of other nations it was unable to sell them to the U. S. Air Force or Navy. Ironically, F-5E and F-5F variants

were later used by these two services to play the role of the lightweight Soviet fighters in air-to-air training exercises.

Another Northrop design for a lightweight fighter was the P-530 Cobra which dated back to the mid-1960s. Although older, simpler, and cheaper MiG-17s and MiG-21s had given F-4 Phantom pilots everything they could handle over Vietnam, neither the Air Force nor the Navy saw any need for a lightweight fighter, so Northrop was unable to find a buyer for the Cobra.

In the early 1970s the Air Force finally decided to at least study lightweight fighter technology, and a request for proposals was submitted to aircraft manufacturers that was supposed to result only in a flying demonstrator. On 13 April, 1972, General Dynamics and Northrop were awarded contracts to develop two flying prototypes each.

Considering the very high price tag associated with the F-14 and F-15, Secretary of Defense James Schlesinger decided that the lightweight fighter (LWF) program would go beyond the demonstration stage. Over the objections of Air Force brass, Secretary Schlesinger directed that the Air Force would proceed on to the full scale development and subsequent production of what he called the Air Combat Fighter (ACF). While the Air Force would not be changing its philosophy from the sophisticated to the simple, Schlesinger's decision meant that the smaller lightweight fighter would finally have a place in the American inventory of combat aircraft.

The General Dynamics entry in the LWF competition was the YF-16, while Northrop's YF-17 was a development of its earlier Cobra design. The competition between the two designs concluded in January 1975 when the Air Force announced that the YF-16 was the winner. This decision was based in part on the belief that the General Dynamics entry had a proven and more reliable engine, and it was the same engine used in the F-15. Ironically, it was this engine that was to be a continuing source of problems for the F-16 production aircraft.

Meanwhile, the Navy realized that it would also have to develop a lightweight fighter to complement its expen-

The twelve FSD Hornets included both single and two-seat variants. These aircraft were used for an extensive evaluation of the airframe design and testing of the aircraft's various systems. Structural testing was carried out on FSD aircraft number four shown here.
(Linn)



The first two-seat FSD Hornet was used for armament and systems evaluations.
(Linn)

sive F-14s. It also was looking for an aircraft that would replace the A-7 in its light attack squadrons. It would be nice to find one design to perform both missions. But the Navy was not about to accept the single-engine F-16. Instead, it turned to Northrop and resurrected the YF-17.

Because Northrop was not experienced in building fighters for carrier operation, it contracted with McDonnell Douglas to build the navalized F-17 as a joint venture. This was a decision that Northrop would later regret, and it would result in litigation between the two aerospace giants. But fortunately, the collaboration between the two companies did finally result in the aircraft that the Navy wanted.

This aircraft was redesignated the F-18, and prior to the construction of the first full scale development (FSD) aircraft, **F-18 PROTOTYPE** was lettered on the tails of the two existing YF-17 aircraft. The original plan was to build both an F-18 fighter version to replace the F-4 Phantom and an A-18 attack aircraft to replace the A-7 Corsair. It was later decided that the same design could handle both missions, and the designation was changed to F/A-18 to reflect this decision.

Although the design of the YF-17 is unmistakably reflected in the Hornet, the F/A-18 is a larger aircraft. Most noticeably, the nose section is longer and wider to permit installation of a multi-purpose radar with both air-to-air and air-to-surface modes of operation. The fuselage is wider, and the forward end of each engine is canted

outward to provide more space for internal fuel. The landing gear and airframe are stronger to withstand the rigors of operations aboard a carrier.

Ten single-seat and a pair of two-seat FSD aircraft were built, each with a different test function in the evaluation and development program. To say that this program had more than its share of problems would be an understatement, but eventually most of the problems would be solved. Solutions often required physical changes to the aircraft. Most notably, the snags in the leading edges of the wings and horizontal stabilizers were removed and the slots in the leading edge extension (LEX) were eliminated. Vents were added on either side of the lower nose section to allow gun gasses to escape, and the unreliable elliptically shaped external fuel tanks were replaced with new tanks with a circular cross section. Full span notched ailerons were also added.

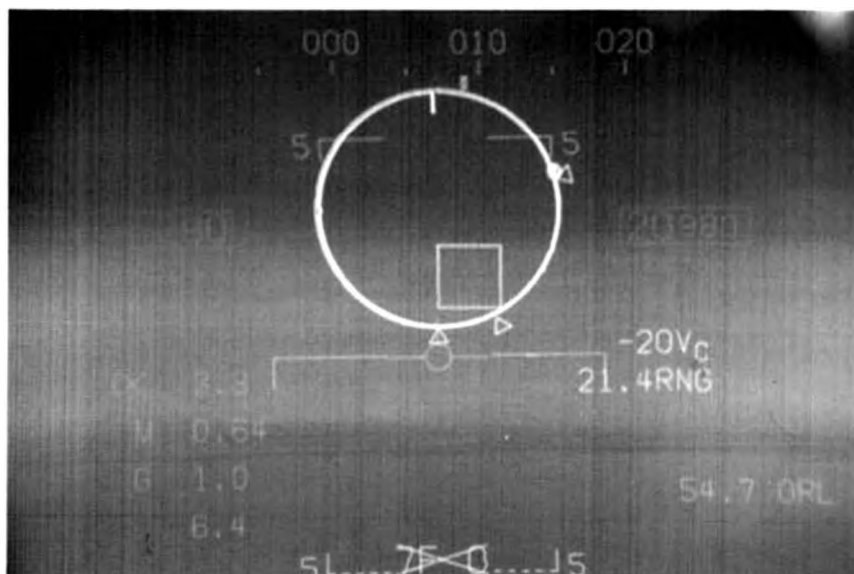
The first Hornet squadron to receive production Hornets was VFA-125, the Fleet Replacement Squadron (FRS) for the Pacific Fleet. This unit began training both Navy and Marine personnel in early 1981, and in January 1983, Marine squadron VMFA-314 became the first combat unit to transition to the F/A-18A. The first Navy fleet squadron to become operational was VFA-113, a former A-7 Corsair unit. Along with its sister squadron, VFA-25, VFA-113 made the Hornet's first carrier deployment aboard the USS CONSTELLATION, CV-64, in August 1985.

The Stingers of VFA-113 became the Navy's first fleet squadron to transition to the F/A-18A. One of their early Hornets is shown here with the unit's familiar bumblebee insignia on its tail.
(Stewart via Flightleader)



Basic flight data and navigational information are displayed on the Head-Up Display or HUD. During an engagement, target and firing information is also displayed. This Hornet is flying on a heading of about 007 degrees at an airspeed of 290 knots. It is at an altitude of 20,890 feet, an angle of attack of 3.8 degrees, and a Mach number of .64. When the photograph was taken, it was at one G, but it had experienced a maximum 6.4 Gs earlier in the flight. The circle with the box inside it is part of the targeting information.

(Official U. S. Navy photograph by CDR John Leenhouts)



In September 1985, VFA-303 became the first Naval Reserve Squadron to receive the Hornet. This reflected the change in philosophy within the Department of Defense in which the reserve components of the military would be equipped with first line equipment and take on a more important role in the nation's defense.

In the mid-1980s, the two remaining MIDWAY class carriers were the only ones left with F-4 Phantoms in their air wings. Unable to operate the F-14 Tomcat because of overhead clearance problems in their hangar bays, the service lives of the MIDWAY and the CORAL SEA were extended by the smaller Hornet. F/A-18A squadrons replaced both the Phantom and the Corsair squadrons in the air wings assigned to these two carriers.

In early 1986, the CORAL SEA, CV-43, was operating in the Mediterranean Sea. Among the squadrons in her air wing were two Navy squadrons, VFA-131 and VFA-132, and two Marine squadrons, VMFA-314 and VMFA-323, each equipped with F/A-18As. These units would soon participate in the Hornet's baptism of fire in combat.

Determined to show Libya's dictator, Muahmar Khaddafi, that he had to stop exporting terrorism, President Reagan challenged the Libyan strong man by crossing his "Line of Death" in the Gulf of Sidra. For a time,

the Navy and Marine aircraft played a game of cat and mouse with the Libyans. But Operation Prairie Fire turned into a live fire exercise when Libyan surface-to-air missile (SAM) sites fired on Navy aircraft. As part of the retaliation, F/A-18 Hornets attacked an SA-5 site near Sirte. This became the first use in combat of the F/A-18A and the AGM-88 high-speed anti-radiation missile (HARM).

About two weeks later, a bomb planted by a terrorist exploded at a disco in West Berlin. It was clearly traced to Khaddafi. The response was Operation El Dorado Canyon which involved both the Air Force and the Navy's carriers on the night of 14 April, 1986. F-111Fs got the headline coverage of the action as they attacked targets in Tripoli including Khaddafi's home. Hornets again participated in the action as they attacked SAM sites with HARM missiles and other weapons. No Hornets were lost in Operations Prairie Fire and El Dorado Canyon, but these actions were small in comparison to the next time a Hornet would fire a shot in anger.

In August 1990, Saddam Hussein sent the Iraqi military charging into Kuwait. This action started what later became Operation Desert Shield. Among the first U. S. forces on the scene were the aircraft carriers USS INDEPENDENCE, CV-62, and USS EISENHOWER, CVN-69.



The Hornet's baptism of fire came during the raids against Libya in March and April 1986. Four squadrons of F/A-18As operated from the USS CORAL SEA, CV-43, during Operation Prairie Fire and Operation El Dorado Canyon that followed. Here a Hornet from VFA-131 gets the signal to launch from the CORAL SEA. It is armed with Sidewinder and Sparrow missiles and carries two external fuel tanks. This stores loading indicates that its mission was probably either a combat air patrol (CAP) or fighter escort.

(Official U. S. Navy photograph by PH2 R. R. Knepp)



Photographs of Hornets taken during Gulf War missions are rare. This one was taken by LT Nick Mongillo, one of the two F/A-18C pilots who scored air-to-air victories over Iraqi MiG-21s. The Hornet is armed with AIM-9M Sidewinder missiles on the wing tips and two AIM-7M Sparrows on the fuselage stations. Two AGM-88 anti-radiation missiles are on the outboard wing pylons, and two Mk 84, 2000-pound bombs are on the inboard wing stations. An external fuel tank is on the centerline pylon.

(Mongillo via Rotramel)

Each of these carriers had two Hornet squadrons in their air wings. VFA-25 and VFA-113 were deployed in INDEPENDENCE, while VFA-131 and VFA-136 were aboard the "IKE." By the time the hostilities of Operation Desert Storm began on 17 January, 1991, these two carriers had rotated home, but six other carriers had taken their place. USS AMERICA, CV-66 and USS SARATOGA, CV-60, each had two squadrons of F/A-18Cs in their air wings. USS THEODORE ROOSEVELT, CV-71, had two squadrons of F/A-18As, while USS MIDWAY operated three F/A-18A squadrons. The sixth carrier, USS JOHN F. KENNEDY, CV-67, operated the last two A-7E Corsair squadrons in Navy service, and was not equipped to operate Hornets at that time. The nine Hornet squadrons aboard the five other carriers flew eighty-nine F/A-18As and Cs during the Gulf War.

Seven Marine squadrons also operated Hornets in support of Operation Desert Storm. VMFA-212, -232, and -235 were equipped with F/A-18Cs, while VMFA-314, -333, and -451 flew F/A-18As. The first all-F/A-18D squadron, VMFA (AW)-121, was the seventh Marine Hornet unit involved. These seven squadrons operated seventy-eight aircraft. Canada also deployed some of its Hornets to the Middle East as well. A total of thirty-four Canadian CF-18s were sent to support the coalition

forces, but reportedly no more than twenty-six CF-18s were deployed at any one time.

Two important errors have been reported about the Hornet's participation in the Gulf War that should be corrected. Several sources have claimed that only one Hornet was lost during the war. In fact, five F/A-18s did not return from the Middle East. The Navy lost two F/A-18Cs to combat action. The first of these was shot down on the opening night of the war, and its pilot, LCDR Michael S. Speicher, was killed. A second Hornet was lost due to non-combat causes on 26 January, and its pilot was rescued safely. On 5 February, another Hornet was lost in combat, and its pilot, LT Robert J. Dwyer, was killed. The fourth and fifth losses occurred on 8 March when two Marine Hornets were involved in a mid-air collision, but fortunately both pilots were rescued safely. Therefore, two of the Hornets were lost in combat, while the other three losses were not related to hostile action.

The other error about the Hornet's participation in Operation Desert Storm involves the action on 17 January when two F/A-18Cs scored what would be the Navy's only two victories over Iraqi fixed-wing aircraft during the war. One source has reported that both Hornets scored their kills with AIM-7M Sparrow missiles, while another stated that both MiG-21s fell victim to AIM-9M Sidewind-

Seven Marine squadrons also flew Hornets during Operation Desert Storm. The aircraft in the foreground is assigned to VMFA (AW) -121 which flew F/A-18Ds in the fast FAC role. These aircraft used five-inch rockets to indicate Iraqi positions on the ground to other aircraft. A white rocket pod can be seen beneath the wing of this aircraft. It also carries AIM-9M Sidewinders on its wing tips, but these were soon deleted from the F/A-18Ds when it became evident that opposition from Iraq's air force was practically non-existent. The nearest aircraft in the background is an F/A-18C from VMFA-235, and the one with the VW tail code is an F/A-18A assigned to VMFA-314. Four Marine EA-6B Prowlers can also be seen in the background.

(DOD)





LCDR Mark Fox was one of two pilots from VFA-81 to down Iraqi MiG-21s during Operation Desert Storm. The two kills scored by VFA-81's Hornets were the only victories recorded by the Navy over Iraqi fixed-wing aircraft. LCDR Fox used an AIM-9M Sidewinder to score his kill, while the other pilot, LT Nick Mongillo downed his MiG-21 with an AIM-7M Sparrow.

(Official U. S. Navy photograph)

ers. The fact is that LCDR Mark Fox in F/A-18C, 163508, scored his kill with an AIM-9M Sidewinder, while LT Nick Mongillo in 163502 shot down his MiG-21 with an AIM-7M Sparrow. Both pilots were assigned to VFA-81 and CVW-17 aboard the USS SARATOGA. After scoring their kills, LCDR Fox and LT Mongillo continued on with their mission of attacking an Iraqi airfield.

During Operation Desert Storm, Hornets were often assigned the dangerous mission of attacking Iraqi radar sites. AGM-88 HARMs and Rockeyes were the weapons of choice in this role. Mk 82, 500-pound bombs and Mk 83, 1000-pound bombs were often employed by Hornets. These were usually carried singly on the wing pylons or in pairs when attached to vertical ejector racks (VERs). Mk 84, 2000-pound bombs were also used extensively, and up to four could be carried singly on the wing stations.

Hornets also employed AGM-62 Walleye electro-optically guided bombs against high value point targets. These were loaded singly on the outboard wing stations,

and fuel tanks were carried on the inboard pylons. The data link pod used to control the Walleye was on the centerline pylon. ADM-141 air-launched decoys were sometimes launched from Hornets, and up to six of these were carried at one time. Marine Hornets fired Maverick missiles at Iraqi positions and armored vehicles and used Mk 77 fire bombs to ignite oil in Iraqi defensive trenches.

VMFA (AW)-121 used its F/A-18Ds in the fast forward air-controller role. For this mission, the aircraft carried LAU-10 rocket pods loaded with four 5-inch rockets fitted with white phosphorous warheads. These pods were carried on the outboard station of VERs which were mounted on the outboard wing stations. For long range missions, fuel tanks were attached to each of the inboard pylons. For shorter ranges, a single tank was carried on the centerline pylon, while two Mk 82, 500-pound bombs were carried on VERs attached to the inboard wing pylons. The loading of the LAU-10s on the outboard pylons remained the same in either case. At first AIM-9s were carried on the wing tip stations by the F/A-18Ds, but these were deleted as the war went on and it became clear that there was only a minimal threat from Iraq's air force. A single AIM-7 would be carried on the left fuselage station for self-defense when an AAR-50 navigation FLIR was carried on the right fuselage station. All other Navy and Marine Hornets retained their AIM-9M armament as standard throughout the war.

Hornets again returned to action against Iraq during Operation Southern Watch in January 1993. Two F/A-18A squadrons, VFA-27 and VFA-97, participated in strikes from the USS KITTY HAWK, CV-63. This was part of a combined Air Force and Navy operation in response to Iraqi violations in the southern "no-fly" zone established at the end of the Gulf War. Again the Hornets were armed with AGM-88 HARMs to attack Iraqi missile sites, and they also delivered conventional bombs against other targets.

As this is written, Hornets are in action again in Bosnia. Marine F/A-18A squadron VMFA-251 and F/A-18D squadrons VMFA (AW)-533 and VMFA (AW)-224 have operated out of Aviano AB, Italy, in support of NATO's efforts to prevent the warring factions from continuing the fighting which has resulted in the deaths of many innocent people. Just how much longer these Marine units and other NATO air assets will continue to be involved in this situation remains to be seen, but it is evident that the Hornet has not seen its last taste of battle and probably won't for some time to come.



The two Hornet squadrons of Carrier Air Wing Fifteen flew missions against Iraq in January 1993 during Operation Southern Watch. This F/A-18A from VFA-27 is loaded with four Mk 83, 1000-pound bombs as well as both AIM-7M and AIM-9M missiles. Messages to the Iraqis have been written on the bombs. This photograph was taken on the flight deck of the USS KITTY HAWK, CV-63, shortly before the attacks on Iraq began.

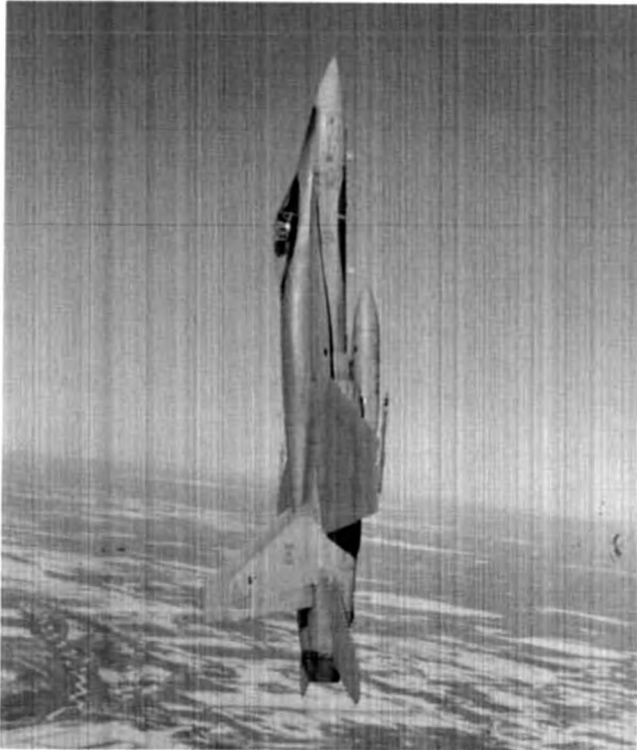
(Drummond)

TYPICAL F/A-18 HORNET WEAPON LOADS

Station 2	Station 3	Station 5	Station 7	Station 8	Remarks
Surface Attack					
Mk 7	fuel tank	Mk 7	fuel tank	Mk 7	LDT/CAM Iraq, 91
2 Mk 7	fuel tank	fuel tank	fuel tank	2 Mk 7	Iraq, 91
Mk 82	fuel tank	fuel tank	fuel tank	Mk 82	FLIR, no AIM-7 Iraq, 91
Mk 82	Mk 82	fuel tank	Mk 82	Mk 82	TINS Iraq, 91
2 Mk 82	fuel tank	Mk 82	fuel tank	2 Mk 82	Iraq, 91
AGM-65E	fuel tank	Mk 83	fuel tank	2 Mk 7	USMC Iraq, 91
Mk 83	Mk 83	fuel tank	Mk 83	Mk 83	Iraq, 91
2 Mk 83	fuel tank	fuel tank	fuel tank	2 Mk 83	Iraq, 91
2 Mk 83	fuel tank	Mk 83	fuel tank	2 Mk 83	Iraq, 91
Mk 83	2 Mk 83	fuel tank	2 Mk 83	Mk 83	Iraq, 91
Mk 84	fuel tank	empty	fuel tank	Mk 84	Iraq, 91
Mk 84	Mk 84	fuel tank	Mk 84	Mk 84	Iraq, 91
AGM-65E	fuel tank	Mk 83	fuel tank	2 Mk 83	USMC Iraq, 91
Anti-Ship/SLAM					
AGM-84	AGM-84	optional	AGM-84	AGM-84	A/C/D Harpoons
AGM-84E	optional	optional	optional	AGM-84E	SLAM
Precision Guided Munitions					
Walleye I	fuel tank	AAW-9A	fuel tank	Walleye I	VFA-151, FLIR, Iraq, 91 no AIM-7, ER/DL-I
optional	fuel tank	optional	pylon	Walleye II	only configuration
GBU-12	fuel tank	empty	fuel tank	GBU-12	VMFA-323, Libya, 86 no missiles
GBU-12/16	GBU-12/16	optional	GBU-12/16	GBU-12/16	
GBU-10/24	optional	optional	optional	GBU-10/24	
Suppression of Enemy Air Defenses/Surface Combat Air Patrol (SuCAP)					
AIM-7F/M	fuel tank	Mk 7	fuel tank	AGM-88	VMFA-323 Libya, 86
Mk 7	fuel tank	fuel tank	fuel tank	AGM-88	Iraq, 91
AGM-88	AGM-88	fuel tank	AGM-88	AGM-88	Iraq, 91
AGM-88	AGM-88	fuel tank	fuel tank	AGM-88	Iraq, 91
AGM-88	fuel tank	empty	fuel tank	AGM-88	Iraq, 91
AGM-88	Mk 84	fuel tank	Mk 84	AGM-88	Iraq, 91
AIM-7F/M	AGM-88	fuel tank	AGM-88	AIM-7F/M	LDT/CAM & FLIR
AGM-88	fuel tank	Mk 83	fuel tank	AGM-65E	USMC, FLIR opt Iraq, 91
2 ADM-141	1 ADM-141	optional	1 ADM-141	2 ADM-141	flat 2, ITER
1 ADM-141	1 ADM-141	optional	1 ADM-141	1 ADM-141	ctr/outbd, ITER
Fast Forward Air Controller USMC F/A-18D only					
1 LAU-10	fuel tank	empty	fuel tank	1 LAU-10	Nav FLIR or TINS Iraq, 91
1 LAU-10	2 Mk 82	fuel tank	2 Mk 82	1 LAU-10	no AIM-9
Combat Air Patrol					
AIM-7F/M	fuel tank	fuel tank	fuel tank	empty	Iraq, 91
AIM-7F/M	fuel tank	fuel tank	fuel tank	AIM-7F/M	Iraq, 91
2 AIM-9L/M	fuel tank	empty	fuel tank	2 AIM-9L/M	VMFA-323, FLIR Libya, 86
Nuclear					
B57 or B61	fuel tank	fuel tank	fuel tank	B57 or B61	

This table is intended to provide examples of typical weapons loads that have been used on F/A-18 Hornets. Most have been used in combat as indicated in the remarks column. While these loads are among the more common that have been used, this list is not intended to be all inclusive. However, it should be very helpful to scale modelers who want to accurately represent weapons loads on their models. Stations 1 and 9 are not listed, but almost always carry AIM-9M Sidewinders. The lack of a number prior to a store indicates parent-mounting, which means that a single store is loaded directly on the station or an appropriate launch rail. Photographs of many of these stores can be found beginning on page 56.

FOREIGN HORNETS



Canada became the first foreign country to purchase the Hornet as they began to replace aging aircraft in their inventory. Here an early CF-18A from 410 Operational Training Squadron climbs vertically with its false canopy clearly visible under the nose section.

(McDonnell Douglas)



Canadian Hornets have a spotlight on the left side of the nose to identify unknown aircraft at night. The spotlight can be seen at the far right in this photograph.



Two-seat CF-18Bs were also purchased by Canada as evidenced by this Hornet from 433 Squadron based at Bagotville.

(Linn)

After the YF-16 won the lightweight fighter competition, General Dynamics expected and received a considerable amount of foreign orders for production F-16 variants. This lightweight fighter, with its relatively low production and operational costs, seemed to be the best new combat aircraft for several nations that were looking to replace the aging machines in their respective air forces. But when the Navy resurrected the YF-17 and turned it into the F/A-18 Hornet, a better alternative became available. Nations unable to afford F-15E Strike Eagles or F-14 Tomcats now had a choice between the F/A-18 and the F-16. Several of the nations that have selected the Hornet did so after holding fighter competitions that involved the F/A-18, F-16 and other aircraft. In some cases the Hornet and the Falcon were the finalists with the Hornet ultimately being declared the winner. While the Hornet has range and ordnance carrying limitations compared to aircraft such as the F-15E, it is superior to the F-16 in most important areas of consideration when it comes to selecting a combat aircraft.

Although Northrop was supposed to receive the orders for a land-based F-18L variant designed for export, McDonnell Douglas marketed the existing carrier-based designs in direct competition to the F-18L. Canada became the first purchaser when it ordered 114 CF-18As and 24 CF-18Bs in April 1980. These are the equivalent to the F/A-18A and F/A-18B respectively, but Canadian Hornets can be identified by the large spotlight on the left side of the nose section which is used for night identification of unknown aircraft. Canadian Hornets also have a civilian ILS as opposed to the automatic carrier landing system used by the U. S. Navy and Marines. The first Canadian Hornet made its maiden flight on 29 July, 1982, and deliveries began in October of that year.

Australia became the second foreign nation to order the Hornet when it signed an order for fifty-seven single-seat and eighteen two-seat aircraft designated AF-18A and ATF-18A respectively. This contract also provided that assembly of the Hornets would be accomplished in Australia after the first two aircraft were built at St. Louis.

The third export order for Hornets came from Spain when that country contracted for seventy-two aircraft in May 1983. Sixty of these were single-seaters which the Spanish designated C.15s, while the twelve two-seaters received the designation CE.15. The first flight of a Spanish Hornet occurred on 4 December, 1985, and deliveries ran from 1986 to 1990.

The next foreign order was the first from an Arab nation as Kuwait signed for forty Hornets. Of these,

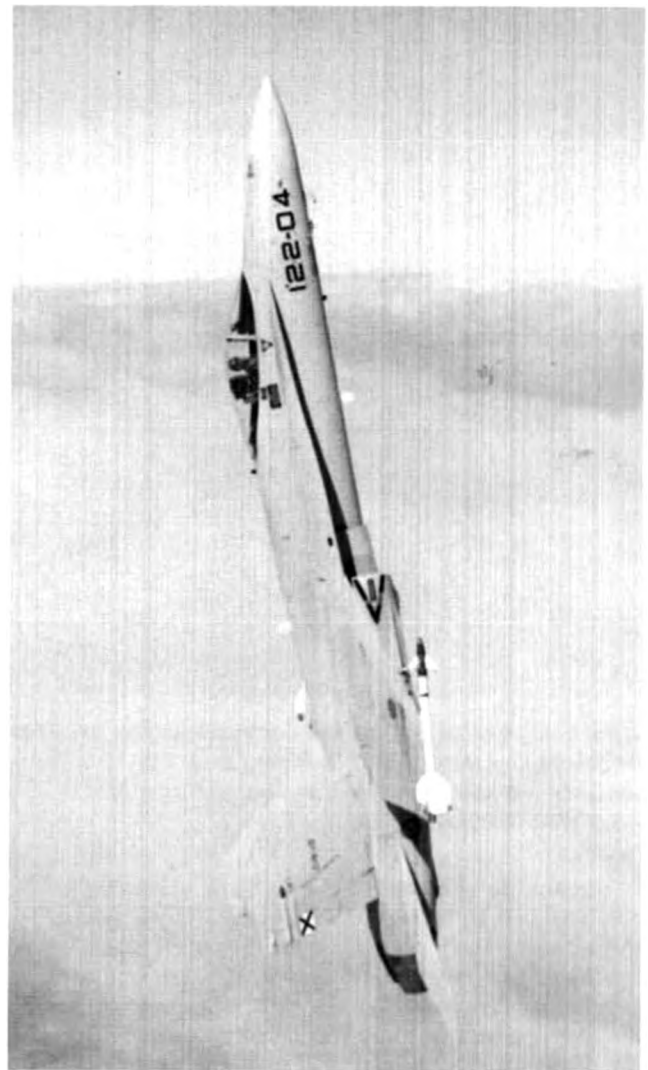


Australia became the second foreign country to purchase the Hornet when it placed an order for fifty-seven single-seat versions and eighteen two-seaters. These were designated AF-18A and ATF-18A respectively. The first Australian Hornet is shown here as it took off on its maiden flight from Lambert Field in St. Louis.

(McDonnell Douglas via Linn)

thirty-two were KAF-18Cs, equivalent to the F/A-18C, and eight were KAF-18Ds, equivalent to the F/A-18D. These were also the first Hornets produced with the new F404-GE-402 enhanced performance engines.

Other orders have already been placed for which production has not yet begun as this is written. Finland has ordered sixty-four aircraft, Switzerland has contracted for thirty-four Hornets, and South Korea plans to buy 120. Just prior to the publication of this book, Malaysia announced that it would purchase the Hornet, and negotiations are in progress with Singapore. An official of the Czech Air Force visited the author and asked for recommendations concerning which fighter would be best for the Czech Republic. After listening to the needs and factors that his nation must consider, the author recommended the F/A-18 Hornet. The Czech representative has made a preliminary visit to McDonnell Douglas, and perhaps someday this former Iron Curtain country will be flying the F/A-18.



Spain was the third foreign nation to order the Hornet which it designated C.15 and CE.15 for the single and two seat variants respectively. This photo shows the first Spanish C.15 during a test flight. (McDonnell Douglas)



Prior to the Gulf War, Kuwait had sought approval from the U. S. to purchase forty Hornets for its air force. In September 1991, after the successful conclusion of Operation Desert Storm, the first Kuwaiti Hornet was rolled out at the McDonnell Douglas plant in St. Louis. It was officially delivered to Kuwait in a ceremony the following month. Note that the searchlight on the left side of the nose is also a feature on Kuwait's Hornets. (McDonnell Douglas)

FUTURE HORNETS



After considerable debate and controversy, the Navy has decided to purchase enlarged versions of the Hornet instead of developing the "Strike" Tomcat. Both F/A-18E single-seat and F/A-18F two-seat versions will be built. These new variants will have a larger fuselage and a greater wing span. Note the completely redesigned engine inlets and the additional hardpoint under each wing.
(McDonnell Douglas)

In an effort to increase what many observers justifiably believed to be less than adequate range figures for the Hornet, McDonnell Douglas began studies for an improved design as early as 1983. The only way to substantially increase the F/A-18's range was to enlarge the airframe so that more fuel could be carried internally. But it was also recognized that other improvements could be made if the size of the aircraft was increased.

The prospect of a new and more capable Hornet gained importance when the A-12 Avenger II was canceled, thus leaving the Navy's fleet of aging A-6E Intruders without a replacement. One alternative was to develop a Strike Tomcat. In much the same way as the Air Force had taken its premier air superiority fighter and turned it into one of the most potent fighter-bombers in the world, the Navy could use the F-14's large airframe as the basis for an aircraft with all-weather ground attack capabilities equal to the F-15E. Many strong arguments could be made in favor of such an upgrade to the F-14. These included the fact that it was faster, it could carry a heavier ordnance load, it had greater range, and it could accommodate a more capable radar than any improved Hornet. This would mean that it could deliver its weapons more accurately under a wider set of conditions than the proposed Hornet, and it also retained its ability to employ the AIM-54 Phoenix which the new Hornet could not. Further, the Tomcat's proven airframe would not have to be altered, while the enlarged Hornet was a new untested aircraft that might well have hidden problems.

The Navy and McDonnell Douglas continued to study what was then called the Hornet 2000, and finally Secretary of Defense Dick Cheney announced that the Navy would proceed with the development and procurement of

improved Hornet variants that would be designated F/A-18E and F/A-18F respectively for the single and two-seat variants. The proposal to develop a Strike Tomcat was put on the shelf.

The F/A-18E and F will be far more than the next production variants of the Hornet. More realistically, they are closer to being a new aircraft. The wing is completely redesigned, having a greater span and one hundred more square feet of surface. Two additional hardpoints are added under the wings, thus increasing the underwing stations from four to six. The engine inlets are much larger and redesigned to provide air to the more powerful engines which will generate 22,000 pounds of thrust each.

The APG-73 radar will be fitted under the new Hornet's radome. This is an improved version of the APG-65 which is also scheduled to replace the present APG-65 in F/A-18C and D aircraft when it becomes available. Other avionics systems presently planned for the F/A-18E and F are ninety percent compatible with those used in the existing C and D variants, however the larger airframe offers more room for future growth and improvements.

The F/A-18E and F will be 60.1 feet long, have a wing span of 44.7 feet (without missiles), and will be 15.8 feet high. Top speed will be slightly increased from Mach 1.7 to Mach 1.8, and the maximum external payload will only be increased from 17,000 pounds to 17,750 pounds. Internal fuel capacity will increase by 3,600 pounds, which is about thirty-three percent more than in the present airframe. Depending on the external stores and mission profile, this will improve the Hornet's tactical radius up to forty percent. The first flight of the new Hornet is expected to take place in 1995.

HORNET PRODUCTION VARIANTS

F/A-18A



Two early production F/A-18As are shown here in the markings of VFA-15. This photograph also provides a good look at the underside details of the Hornet. (McDonnell Douglas)

Following the prototypes and full scale development (FSD) aircraft, the F/A-18A became the first single-seat production variant of the Hornet. Production was divided into Lot numbers, and each Lot was subdivided into three production Blocks. The number of aircraft varied considerably with as many as thirty-three F/A-18As being included in a single Block.

Early F/A-18As had all of the changes made to the FSD aircraft during their test and evaluation programs. Among the more noticeable physical changes were the elimination of the snags on the leading edges of the wings and horizontal stabilizers, removal of the LEX slots, the addition of gun bay purging vents on each side of the lower nose section, and the addition of full span, notched ailerons. Small formation panel lights were added at the wing tips on both the upper and lower surfaces. (See page 31.)

FSD Hornets had used an elliptically shaped, 315-gallon, external fuel tank. The reason an elliptical design was initially preferred had to do with clearance problems on aircraft carriers. There was not enough clearance for a 300 + gallon fuel tank with a circular cross section to be carried on the Hornet's centerline station when the aircraft was operating on a carrier without a flush deck cata-

pult system. Therefore, the elliptical tank was designed. Problems with this tank subsequently required a change to a more conventional tank with a circular cross section and a capacity of 330 gallons, but this meant that carriers without the flush deck catapults had to be modified before they could operate Hornets. All existing carriers remaining in service with the Navy now have flush deck catapults. The 330-gallon tanks are now standard and can be used on the centerline and two inboard wing stations. When empty, they may also be transported on the outboard wing pylons, but it is very rare to see a Hornet with tanks on its outboard pylons. This loading for the external tanks is the same for all present Hornet variants. The 330-gallon tanks can be made of fiberglass or metal. Fiberglass tanks can be used for carrier operations, but the metal tanks are restricted to shore-based operations only.

As the F/A-18A continued in production and service, additional changes were made. In late 1988, ALE 39 countermeasure dispensers were introduced. These were located under the engine inlets just forward of the main landing gear wells. (See page 52.)

When flown at high angles of attack, turbulent air off the LEX shook the vertical tails, and it did not take long to



These Marine F/A-18As are assigned to VMFA-314 which was the first Marine squadron to become operational in the Hornet. They are painted in the early paint scheme as described on page 33. The inboard wing pylons are often removed from Hornets during peacetime and when they are not deployed aboard carriers. (Linn)

discover that the Hornet's tail was not as strong as it needed to be. The initial fix to this problem was made in the 1985-86 time frame by adding three external braces at the inboard base of each vertical tail. Externally, these braces appeared as three patches where the inside of each vertical tail joined the fuselage. (See page 55.) But these "bandaids" did not completely solve the problem. The second part of the solution was the addition of LEX fences, however, they were not approved until May 1988. These fences were metal plates designed to smooth the airflow coming off the LEX so as to reduce the aerodynamic pounding on the tails. Each fence measured 32.1 inches long at the root, 22.5 inches long at the top, and 8.5 inches high. (See the bottom photos on page 49.) Both the braces and the fences were added to Hornets on the production line, and they were retrofitted to existing aircraft.

In service with regular Navy and Marine squadrons, the F/A-18A's strong and weak points came into sharper focus. Its reliability and maintainability were superior to that of other aircraft, particularly when compared to the much older A-6 and A-7. Navy A-7 pilots who transferred to the Hornet liked its speed and maneuverability and the fact that they could now go out and yank and bank in air-to-air combat with the fighter jocks. As sophisticated combat aircraft go, the Hornet was also easy to learn, and its systems made good pilots even better.

But there were also some problems. Most noticeable was the lack of range. Although efforts have been made to explain away this shortcoming by weasel-wording comparisons with other aircraft, the honest positions of even the Hornet's strongest supporters admit that the lack of range is a problem.

Another concern is a lack of payload capability. The F/A-18A is advertised to carry up to 17,000 pounds of external stores, but there are three limiting factors that must come into play. First, because of the lack of internal fuel capacity, Hornets are almost never seen operationally without at least one, if not two, external fuel tanks. This uses up some of that 17,000 pounds, not to mention one or two hardpoints.

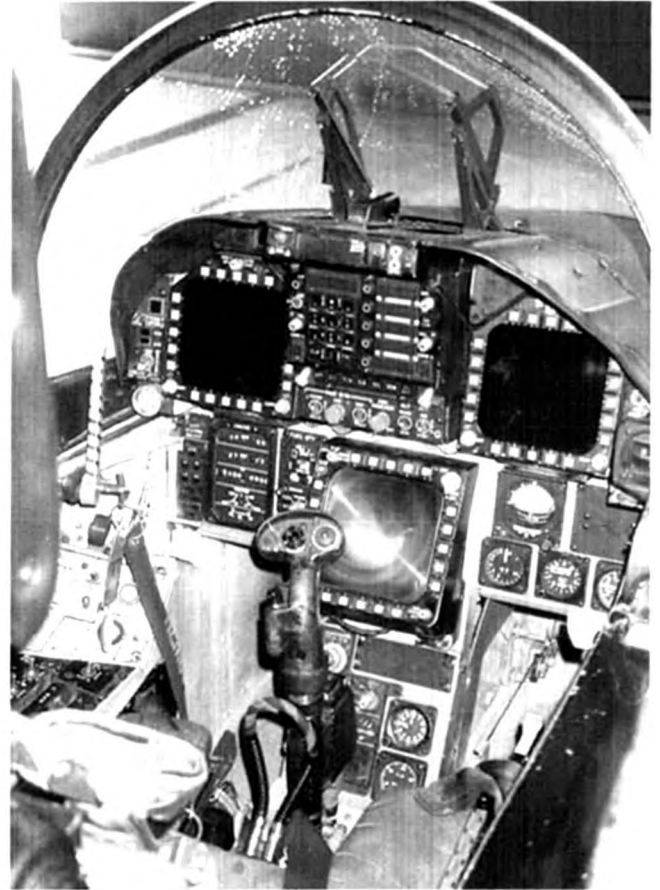
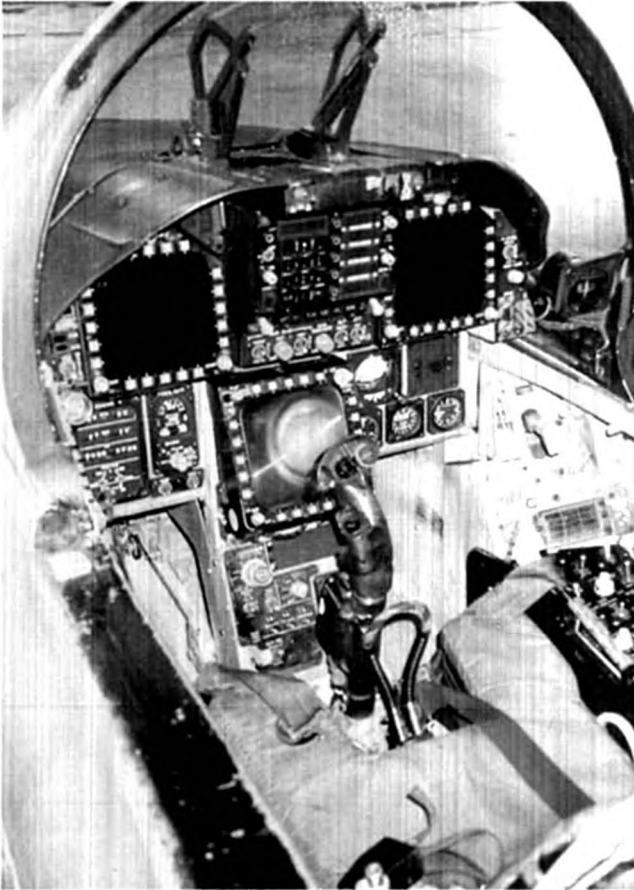
The second limiting factor is the suspension equipment. Pylons not used for fuel tanks are usually limited to no more than two stores each. While multiple ejector racks (MER) and triple ejector racks (TER) are authorized for use on the Hornet, the stores certified for carriage on them are limited to items like small practice bombs, paraflares, and decoys. (Hornets are often displayed publicly with larger weapons on these racks, but they are not authorized to employ them operationally.) Mk 82, 500-pound bombs and any larger weapons must be carried singly (in what is called a parent mounting where the weapon is attached directly to the pylon or an appropriate launch rail), or they can be carried in pairs on vertical ejector racks (VER). By way of comparison, many of these larger weapons could be loaded in much higher numbers on MERs and TERs on both A-6 and A-7 aircraft.

Third, the Hornet is more drag critical than many other aircraft including the F-4, A-6, and A-7 to which it is often compared. Different weapons have varying amounts of drag, and the drag induced by these weapons on a Hornet can be far more critical than on other aircraft. Therefore, claiming that the Hornet can carry the same weight of external stores as a Phantom or a Corsair is misleading. Unless you plug in how many examples of a given store it takes to get to that weight (and whether you can actually hang that many on the suspension equipment), what the drag factors are, what the necessary fuel requirements are, and where that fuel must be carried, such claims are worthless. If you compare a clean Hornet to another clean aircraft, you eliminate the critical drag factors, and the Hornet comes out well. But what good is a clean aircraft in combat?

All of this is not intended to be critical of the Hornet, but instead it is offered to keep things in perspective. The F/A-18 has proven to be an excellent aircraft with many outstanding qualities. A great deal of positive publicity has been generated about it. But like any other combat aircraft, it has its shortcomings as well.

A total of 371 F/A-18As were produced (not counting FSD aircraft) before they were replaced on the production lines by the F/A-18C.

F/A-18A COCKPIT DETAILS

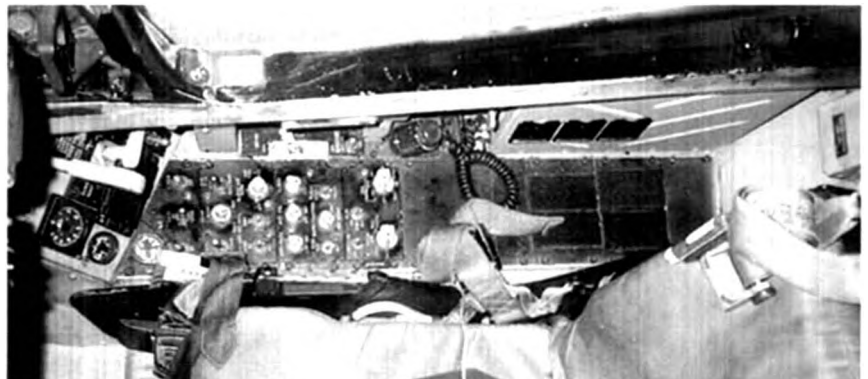


The main instrument panel, control column, and head-up display can be seen in these photographs taken in the cockpit of F/A-18A, 163117. Colors for the F/A-18A's cockpit are the same as those for the F/A-18C illustrated on page 35.



Throttles and other details on the left console are shown here.

This is the right console in an F/A-18A. Most of the aft portion is unused.



F/A-18B



This early production two-seat Hornet was still designated a TF-18A when this photograph was taken aboard the USS CARL VINSON, CVN-70, on 27 April, 1984. The aircraft is assigned to VFA-125, which is the Fleet Replacement Squadron for the Pacific Fleet. It was also the first unit to become operational with the Hornet. (Linn)

Originally designated the TF-18A, the initial production two-seat Hornet was subsequently redesignated F/A-18B to reflect the fact that it retained the combat capabilities of the F/A-18A. In practice however, F/A-18Bs have been used almost exclusively in training roles, unlike the subsequent F/A-18D two-seat variant which has been assigned to Marine combat units in considerable numbers.

A total of forty F/A-18Bs were produced, and except for a few that were used for test and evaluation purposes and one flown by the Blue Angels, all of these aircraft were assigned to the Navy and Marine training squadrons.

These include VFA-106 for the Atlantic Fleet, VFA-125 for the Pacific Fleet, and VMFAT-101 for the Marines. A few have joined F/A-18As as adversary aircraft that represent enemy aircraft in mock air to air combat. F/A-18Bs were not assigned to regular Navy and Marine squadrons as proficiency trainers as reported elsewhere.

The Hornet's airframe was not lengthened in order to accommodate the second cockpit. Instead, space was obtained by reducing the size of the forward fuselage fuel tank, and this resulted in approximately a six percent reduction in the internal fuel capacity.

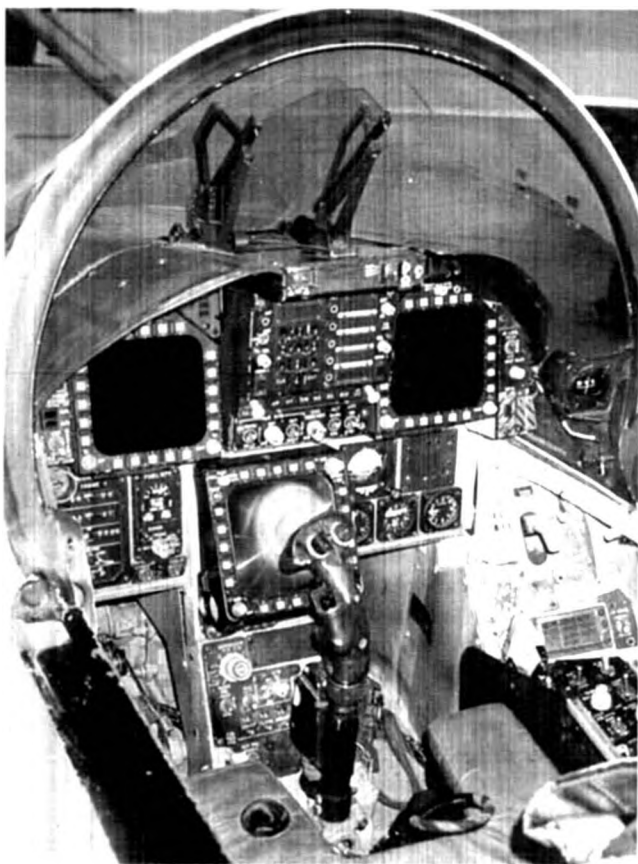


VFA-106 is the Fleet Replacement Squadron for the Atlantic Fleet. One of the unit's F/A-18Bs is shown here after making an arrested recovery aboard the USS DWIGHT D. EISENHOWER (CVN-69). This particular F/A-18B is often mistaken for an F/A-18D with the same markings, but the F/A-18D has a 000 modex instead of the 300 shown here. A photograph of the F/A-18D is on page 34.

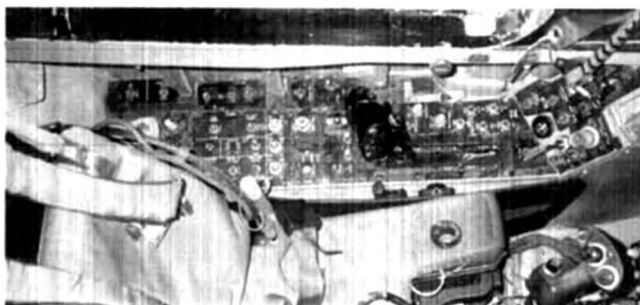
(Official U. S. Navy photograph by PH2 Tracy Lee Didas)

F/A-18B COCKPIT DETAILS

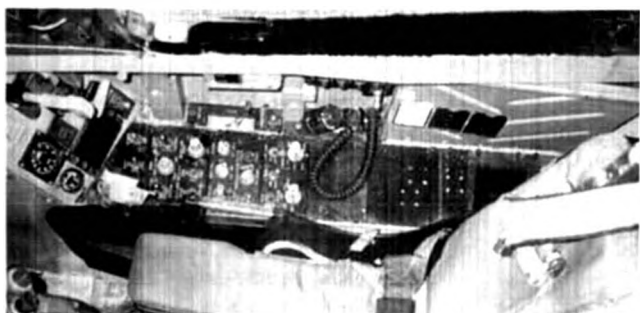
FRONT COCKPIT



The front cockpit in the F/A-18B is practically identical to that in the F/A-18A. All photographs on this page were taken in F/A-18B, 163115.

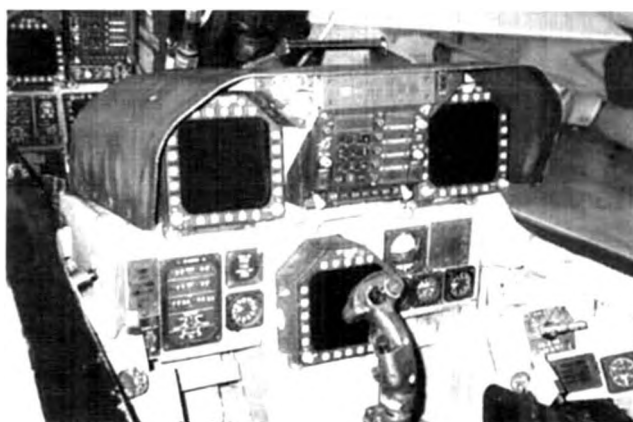


The left console in the front cockpit is covered with switches and knobs all the way back to the bulkhead behind the seat.



This is the right console in the front cockpit.

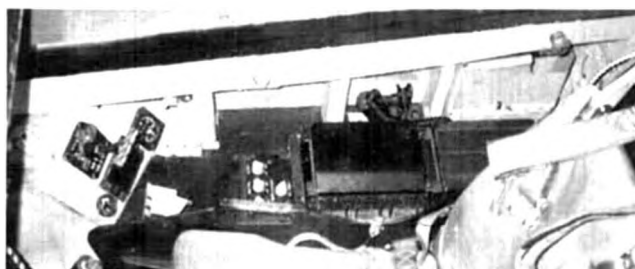
REAR COCKPIT



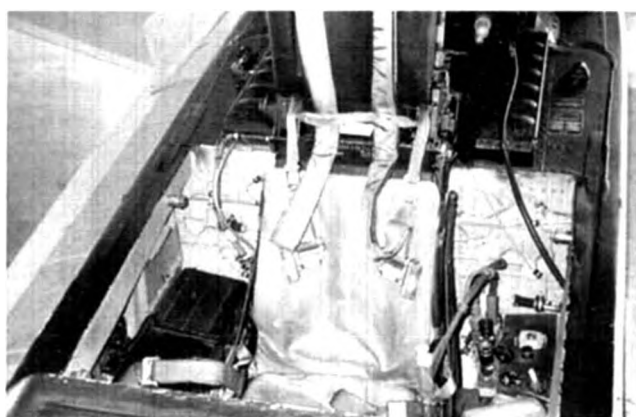
The instrument panel in the rear cockpit is illustrated here. Colors in the F/A-18B cockpits are the same as those for the F/A-18D as shown on pages 36 and 37.



Details of the left console in the rear cockpit can be seen in this view. It is far simpler than the left console in the forward cockpit.

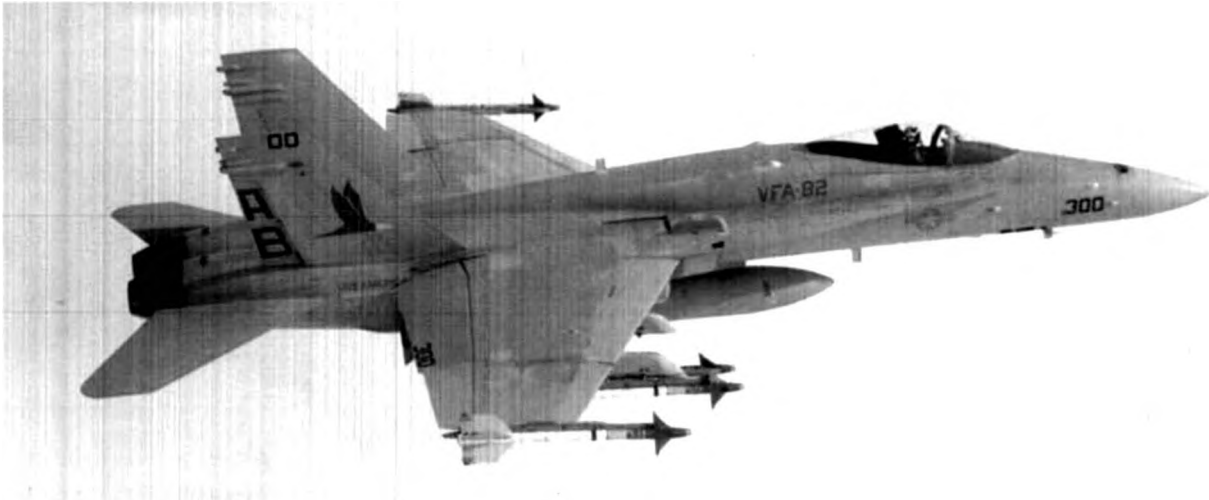


There are only a few knobs on the right console in the rear cockpit.



This view looks aft into the rear cockpit and shows the bulkhead behind the seat.

F/A-18C



The F/A-18C is the second single-seat production variant of the Hornet, and it can be distinguished from the earlier F/A-18A by the additional fairings on the vertical tails, the spine of the aircraft just aft of the canopy, and on the sides of the forward fuselage. One of the new antenna fairings on the nose can be seen just above the modex, and the other is just forward of the national insignia. The additional fairings on the spine are located just above the VFA in the unit designation. This F/A-18C is the CAG aircraft from VFA-82 which is part of Carrier Air Wing One aboard the USS AMERICA, CV-66. It is armed with six AIM-9M Sidewinder and two AIM-7M Sparrow missiles. The extreme aft end of one of the Sparrows can be seen just aft and below the trailing edge of the wing. (McDonnell Douglas)

Although the physical appearance of the F/A-18C is changed very little from the F/A-18A which it replaced on the production line in FY 1986, several important improvements have been made. The capability to employ the AIM-120 AMRAAM was added by making the necessary upgrades to the AN/APG-65 radar and the addition of a new stores management computer. A small change was also made to the hand grip on the control column. Compatibility with the AGM-65F imaging infrared (IIR) version of the Maverick air-to-surface missile was also added.

For self-protection in a hostile environment, the AN/ALQ-165 airborne self-protection jamming (ASPJ) system was to be added to the F/A-18C, and provisions for it accounted for several of the extra antenna fairings found on this variant of the Hornet as well as the F/A-18D. However, the ASPJ system was cancelled by Congress on dubious grounds in late 1992.

The termination of the ALQ-165 ASPJ system, which was designed for both the F/A-18 and F-14, is one of the more interesting stories associated with the way opponents of defense spending within the Clinton Administra-

tion have gone about cutting programs. Senator David Pryor, a close friend of President Clinton and a fellow Democrat from Arkansas, has long been one of the most outspoken among the critics of the ASPJ system. These opponents placed provisions in the Fiscal 1993 Defense Authorization Act requiring that funding for the system be ended if it did not meet certain criteria during tests. Among these criteria was that it increase the number of aircraft that would survive a combat scenario by thirty-percent over aircraft without the jamming protection. In order to meet this criteria in one example, 117 percent of the aircraft that were launched would have to return from the mission. Since it is impossible for a higher number of aircraft to return from a mission than the number that was launched, the ALQ-165 system failed the test. The Navy claimed that it had no choice but to cancel it as required by the provisions in the Fiscal 1993 Defense Authorization Act.

The "failure" of the ALQ-165 and its subsequent cancellation demonstrates either the absolutely uninformed and ignorant actions taken by political opponents



An F/A-18C from VFA-37 gets the signal to launch from Cat 3 on the USS JOHN F. KENNEDY. The squadron is nicknamed the Bulls as is shore based at NAS Cecil Field, Florida. One reference on the Hornet stated that VFA-37 participated in Operation Desert Storm. This is not correct. The unit was in transition to the F/A-18 during the Gulf War and did not even become an operational Hornet squadron until late 1991, several months after the war was over.



This F/A-18C carries the markings of VX-4, which is an operational test and evaluation unit based at NAS Point Mugu, California. The upper UHF/IFF blade antenna on the spine is raked back at an angle, and this indicates that the aircraft is from production Lot 14 or subsequent. (Roth)

of defense programs, or it illustrates their deliberate and calculated design to require impossible performance from a system. When the system then fails to meet their unattainable criteria, the opponents claim that it is not any good. Senator Pryor called the ASPJ a "failed system," but if F-14 and F/A-18 pilots go into combat relying on the existing ALQ-126B, which was designed for the threats of the 1970s, his actions may well cost the lives of American pilots as surely as the missiles that shoot down the aircraft in which they are flying.

The fact is that the ALQ-165 ASPJ system is the most capable self-protection jammer in the world. In tests it detected ninety-eight percent of the threats, correctly identified them, and then implemented the proper jamming to counter them. It would be incorrect to claim that the ASPJ system is without fault, but what system of its sophistication is? However, these faults are minor, and the system is now ready to be installed in the Navy's fighters to protect them against present and expected future threats. If the Navy is going to provide this protection for its aircraft, it must now start from scratch to develop a new system, and this will prove far more costly and time consuming than fixing any problems with the ALQ-165.

Additional improvements made to the F/A-18C were beneath the surface in the form of various avionics and software upgrades. Among the more important was a new mission computer with more memory and a faster

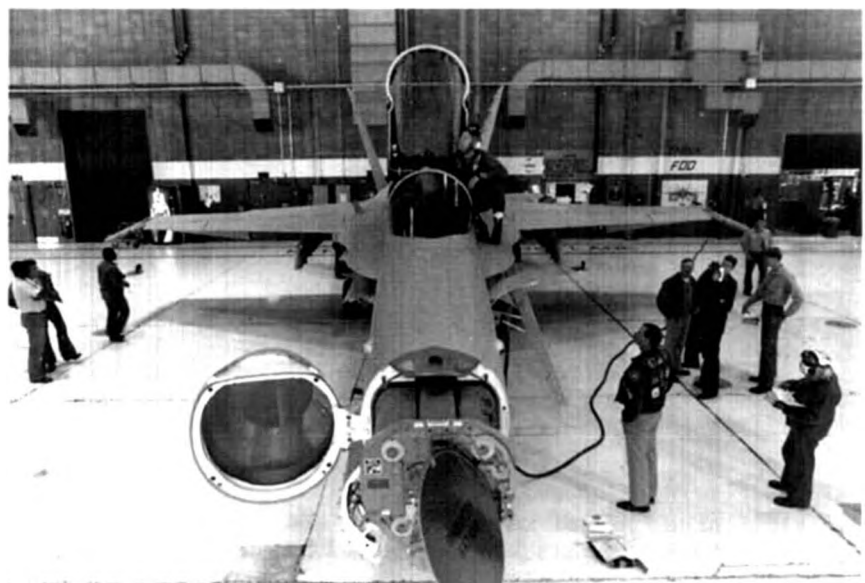
processing speed than the one used in previous Hornets. A discussion of other computer and avionics upgrades quickly degenerates into a maze of alpha-numeric designations. Even though these are sometimes found in various references, they often prove less than enlightening in defining just how the change really improves the capability of the aircraft. Far more informative is to explain that the computer and sensors in the F/A-18C keep track of the fuel in the aircraft's tanks and keep it evenly distributed or "square balanced." The advantages of this improvement in aerial combat are quite obvious.

The association of the term "night attack" with the Hornet usually is in reference to the F/A-18D. But beginning with BuNo. 163985, F/A-18Cs are also night attack aircraft. These Hornets, like their F/A-18D counterparts, have a gold tinted canopy and incorporate the AVQ-28 raster HUD. The MXV-810 night vision goggles (NVG) may also be used in these aircraft. Inside the cockpit, the lighting switch has only two positions as opposed to three for previous Hornets. Night attack F/A-18Cs are also compatible with the AAR-50 thermal imaging navigation set (TINS) which is carried on the right fuselage station. (See page 62.)

The APG-73 is an improved version of the APG-65 radar with three times the speed and memory of the existing set. It has been under development since 1990, and will replace the APG-65 in the F/A-18C and D when it becomes available.

Night attack capabilities were added to Block 29 and subsequent F/A-18C and F/A-18D aircraft. F/A-18C, 163985, became the first single-seat night attack Hornet. The easiest way to distinguish a night attack F/A-18C from an earlier "C model" is to look for the gold tint in the canopy which is characteristic of the night attack version. Here, personnel from VFA-146 check out the first night attack F/A-18C to be delivered to an operational Navy squadron.

(Official U. S. Navy photograph by PH3 Clay Roberts)



F/A-18D



The commander's aircraft from VMFA (AW)-242 was F/A-18D, 164224, when this photograph was taken in May 1993. The F/A-18D has the same additional antenna fairings as the F/A-18C on the vertical tails, spine, and forward fuselage. (Linn)

The F/A-18D replaced the F/A-18B on the production line as the new two-seat variant of the Hornet in 1986. It incorporated all of the improvements made to the F/A-18C, and all of the various new antenna fairings on the nose, spine, and tail found on C model were likewise added to the F/A-18D. Originally conceived primarily to fill the training role, the new two-seat Hornet retained all of the F/A-18C's weapons capabilities, and this allowed it to be adapted for specialized combat roles. VMFA

(AW)-121 became the first all-F/A-18D squadron with the Marines, and it saw action in Operation Desert Storm. Additional Marine F/A-18D "all weather" or AW squadrons have since become operational.

The cancellation of the A-12 attack aircraft meant that the Navy and Marines had to get more life out of their tired but capable A-6E Intruder airframes. Some of these aircraft had served for over two decades, and a program had already been necessary to refit these aircraft with new composite wings when the original wings reached the end of their safe fatigue life. Many years of attrition had also resulted in a shortage of Intruders, and the F/A-18D offered a solution. It was decided that Marine all weather attack squadrons, designated VMFA (AW), would give up their Intruders which would then be turned over to the Navy. As a replacement, these Marine squadrons would be reequipped with night attack F/A-18Ds. Additionally, VMFP-3, the only remaining squadron equipped with the RF-4B Phantom, would be redesignated VMFA (AW)-225, and it would also transition to the F/A-18D night attack Hornet.

There has been quite a bit of confusion about what is and what is not a night attack F/A-18D. Some reports state that Navy F/A-18Ds are not night attack Hornets, but Marine D models are. The fact is that all F/A-18Ds beginning with Lot 12 (BuNo. 163986), are night attack Hornets. F/A-18Ds in production Lots 10 and 11 are not. The night attack Ds have a tinted canopy, compatibility with MXV-810 night vision goggles (NVG), and they can use the AAR-50 thermal imaging navigation set (TINS) on their right fuselage station. (See page 62.) They also have the AVQ-28 raster HUD in the front cockpit.



LT Matt Soltis of VMFA (AW)-225 models the MXV-810 Catseye night vision goggles. (Roth)

This is a late production F/A-18D as evidenced by the upper UHF/IFF blade antenna which is raked back at an angle. The lower UHF/TACAN antenna, which is visible just beyond and slightly in front of the boarding ladder, is also angled back. On earlier Hornets, these two blade antennas were vertical. This aircraft is assigned to VMFA (AW)-225. Note the false canopy painted under the forward fuselage section. (Bell)



It has also been reported that night attack F/A-18Ds have a different rear cockpit configuration than conventional F/A-18Ds. Night attack F/A-18Ds are designed so that they can be fitted with either of two rear cockpit configurations. (See pages 36 and 37.) Although most night attack Ds do have what is called a night attack configuration in the rear cockpit, the standard configuration with the throttles and control column can also be installed if desired. During the Gulf War, VMFA (AW)-121 had one aircraft with the standard configuration, while all of the rest had the night attack configuration.

In the night attack configuration, the flight controls, to include the throttles and control column, are removed. Two controllers are added to the side consoles, and these have various switches to control the aircraft's radar and sensor system as well as to operate the ECM gear. A switch at the center of each controller is associated with the HARM missile.

The instrument panel in the night attack rear cockpit configuration is also different. A color multi-purpose display is located high at the center of the panel, and a rear advisory and threat warning indicator panel runs across the top of the panel. All of these features are visible in the photographs on page 37.

On 30 September, 1990, the last RF-4B recon Phantoms were retired from Marine service. The last of the recon Crusaders had been retired from Navy and Marine

units several years earlier, and this left the two services short of tactical reconnaissance assets. The lack of a new aircraft to fill this role was due in part to the ever-present budget constraints and also to the lack of deck space on the few remaining active carriers in the Navy. In the meantime, the tactical reconnaissance mission had been turned over to specially equipped F-14 Tomcats that carried externally mounted Tactical Airborne Reconnaissance Pod Systems (TARPS). As an alternative, or perhaps as a supplement, a recon Hornet was proposed. A reconnaissance system, which could be installed interchangeably in the nose of an F/A-18 in place of the cannon, was developed. It was first tested in FSD aircraft number 1, and then in F/A-18A, 161214. Although the internal cannon was deleted when the reconnaissance equipment was fitted in the nose, the Hornet still retained its ability to deliver all of its external weapons.

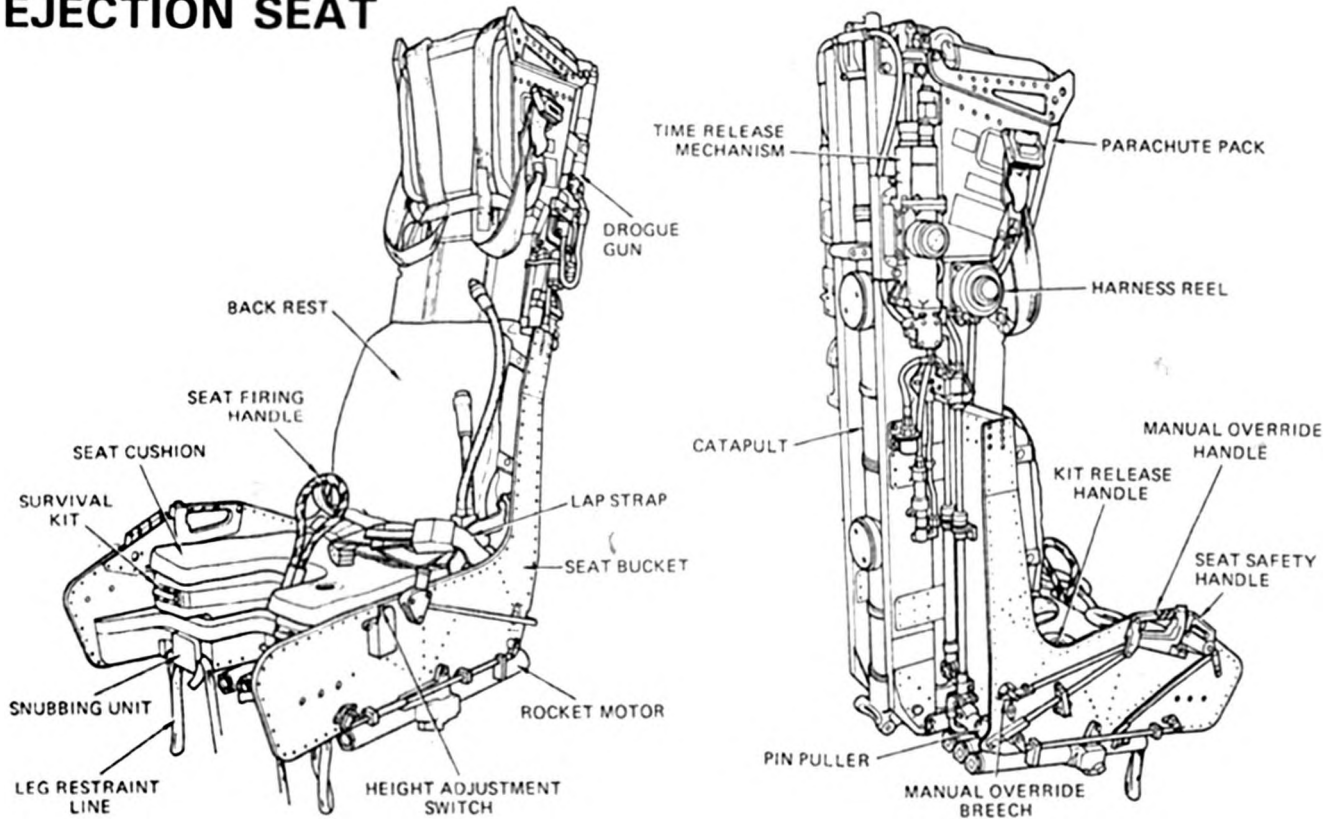
In 1992, McDonnell Douglas began testing the advanced tactical airborne reconnaissance system (ATARS) with the first F/A-18D, 163434. When ATARS testing began, the system was contained in a pod modified from a 300-gallon fuel tank suspended from a BRU-32 pylon on the centerline. This pod was 188.3 inches long and weighed 410 pounds. Actual ATARS installation in the nose of 163434 did not occur until the middle of 1993, about the time the program became another victim of budget cuts and was cancelled.



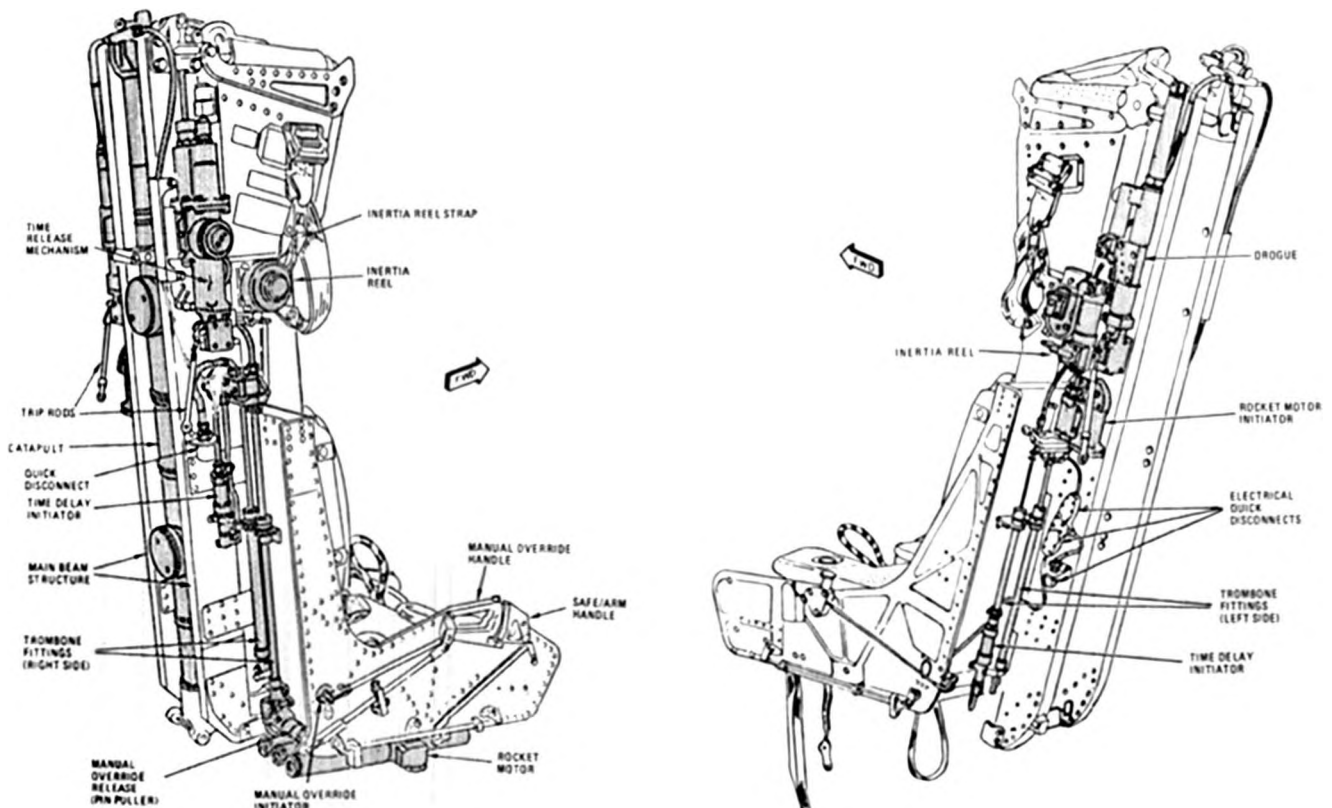
After originally being tested in the first Hornet prototype and then on F/A-18A, 161214, a nose-mounted reconnaissance system was fitted in F/A-18D, 163434, in place of its 20 mm cannon. This aircraft is now the only "Recce Hornet." The system was designed to be interchangeable with the gun, so that a Hornet could be configured for the reconnaissance mission or as a fighter when needed. It was intended for use on the F/A-18C and F/A-18D, however it has not become operational. (Official U. S. Navy photograph)

HORNET DETAILS

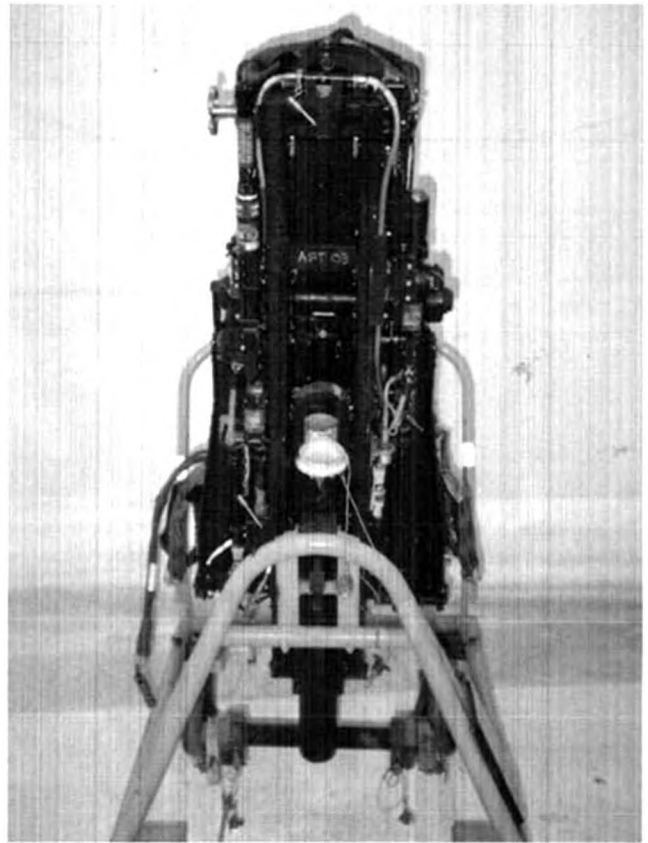
EJECTION SEAT



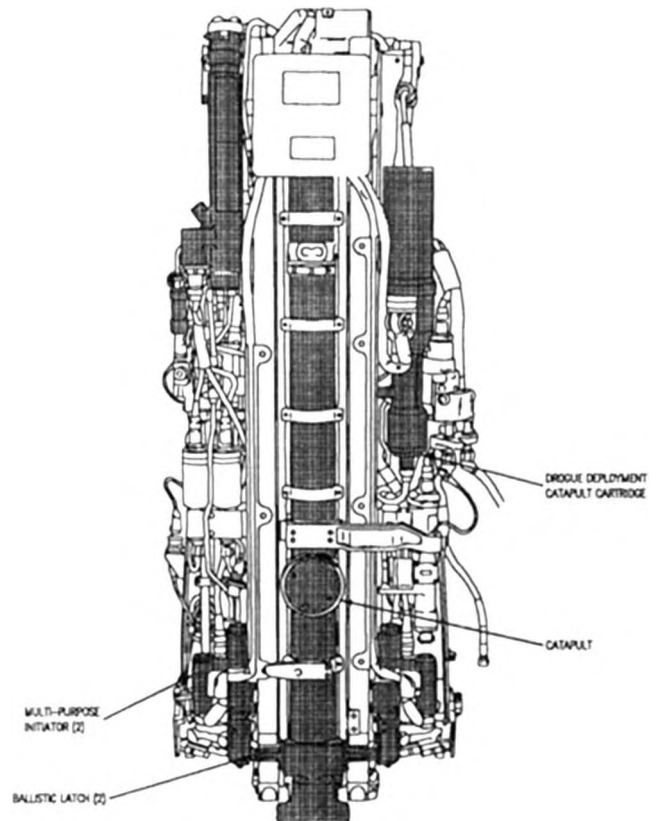
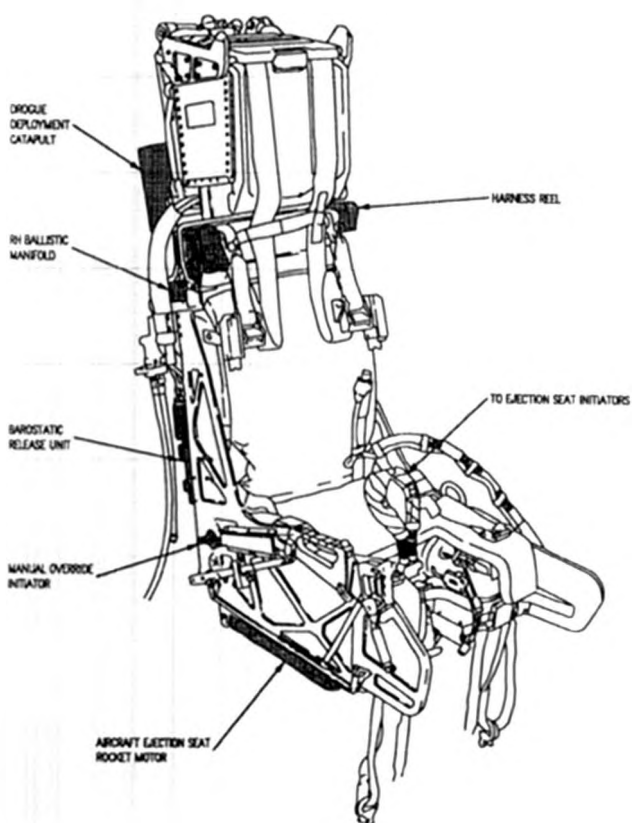
These two drawings show the details of the SJU-5/A ejection seat that was used in F/A-18As and early F/A-18Cs. It was also used in the aft cockpit of F/A-18Bs and early F/A-18Ds. Slightly modified versions were also used in CF-18As and the rear cockpit of CF-18Bs. (U. S. Navy)



The SJU-6A ejections seat, which is very similar to the SJU-5/A shown above, was used in front cockpits of F/A-18Bs and early F/A-18Ds. A modified version was also used in the forward cockpit of CF-18Bs. (U. S. Navy)

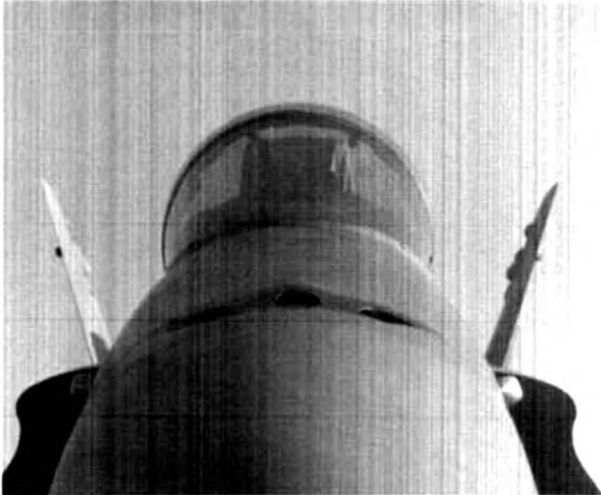


These two photographs show an SJU-5/6 series seat that has been removed from an F/A-18A. (Both Rotramel)

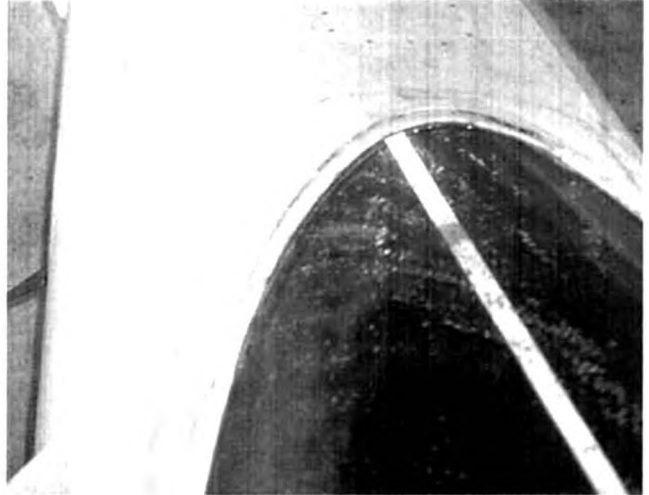


The SJU-17/A seat was installed in F/A-18C and F/A-18D aircraft beginning with BuNo. 164196. Two detailed color photographs of one of these seats installed in an F/A-18D can be found on page 37. (U. S. Navy)

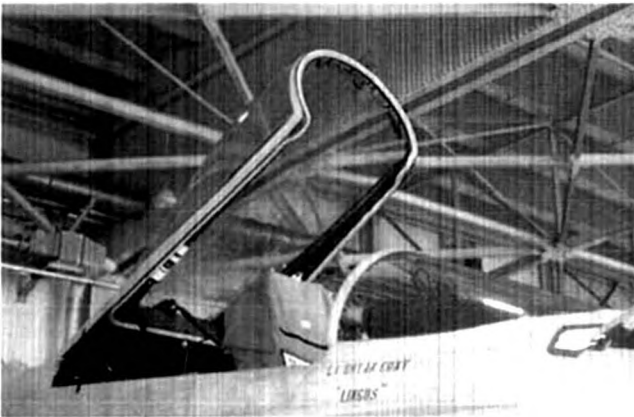
CANOPY DETAILS



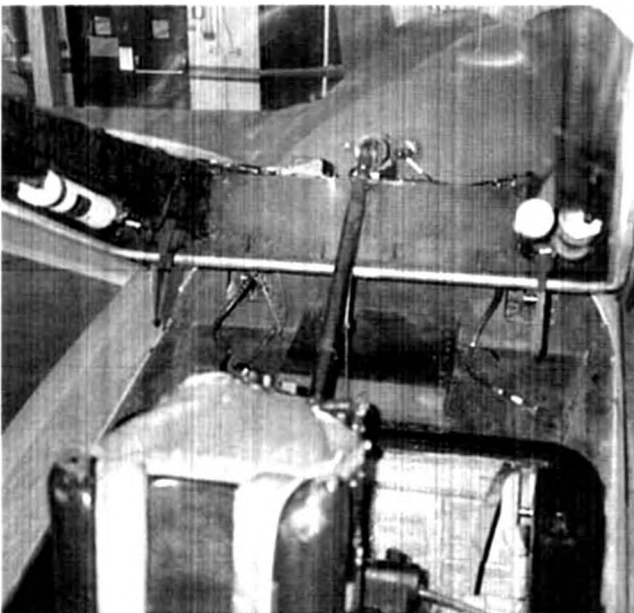
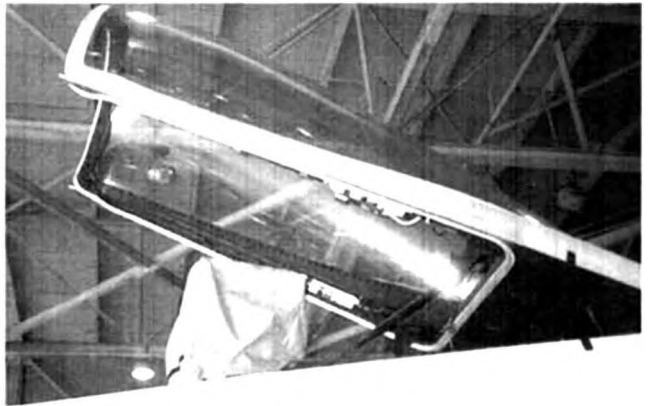
The bubble shape and cross section of the canopy used on single-seat Hornets can be seen in this front view.



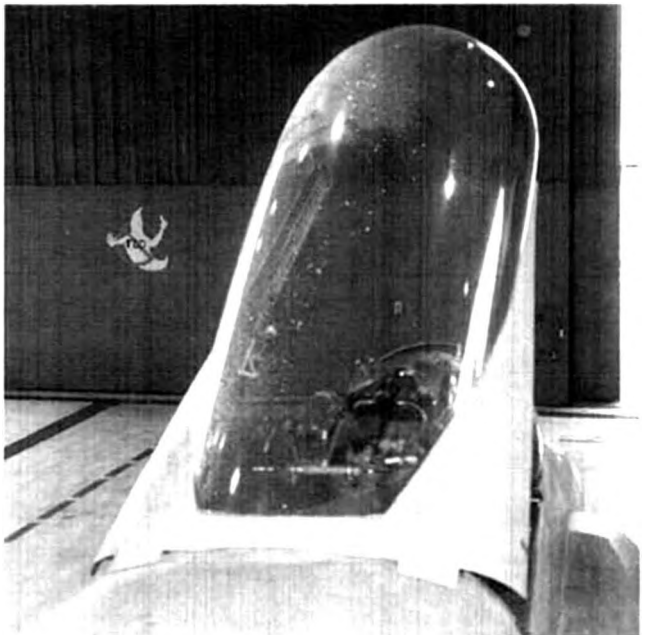
At the base of the windscreen is a series of vents that blow off any rain that may remain on the glass.



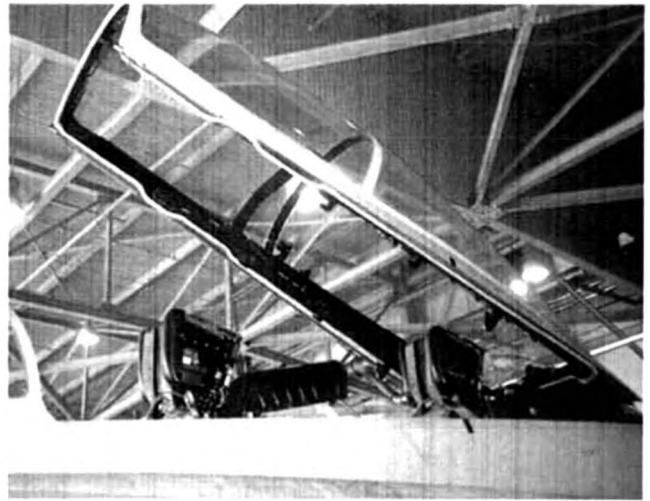
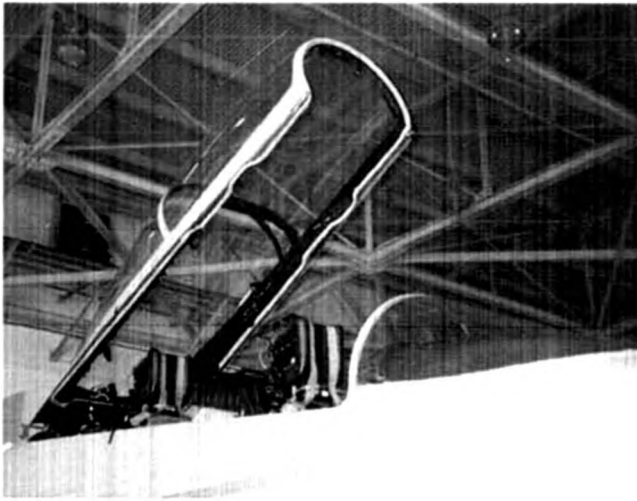
Details of the canopy used on single-seat Hornets can be seen in these two photographs. The interior framing of the canopy is flat black, and the pressure seal that runs around the framing is light gray.



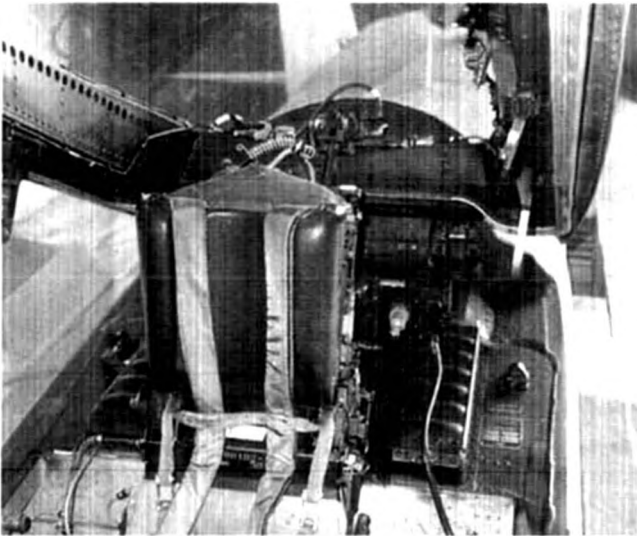
The interior of the rear portion of the single-seat canopy and part of the mechanism that raises and lowers it are shown here.



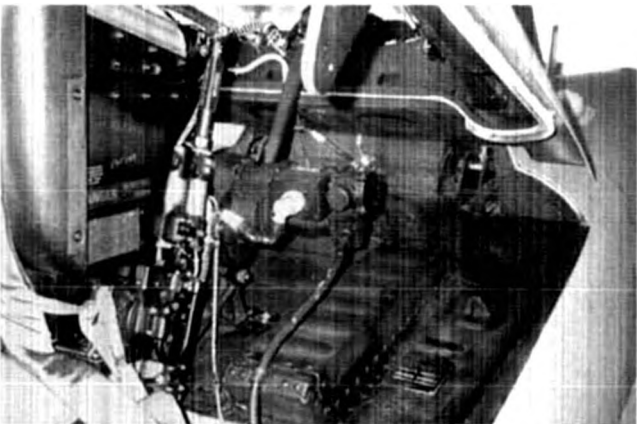
This is the single-seat canopy as viewed from behind. Note the hinge covers at the aft end of the framework.



These photographs show details of the canopy used on the two-seat F/A-18B and F/A-18D. Again, the inside framework is flat black. The forward windscreen portion on the two-seaters remains the same as the one on single-seat Hornets.



The aft end of the two-seat canopy is considerably different than on the single-seat version illustrated on the previous page.



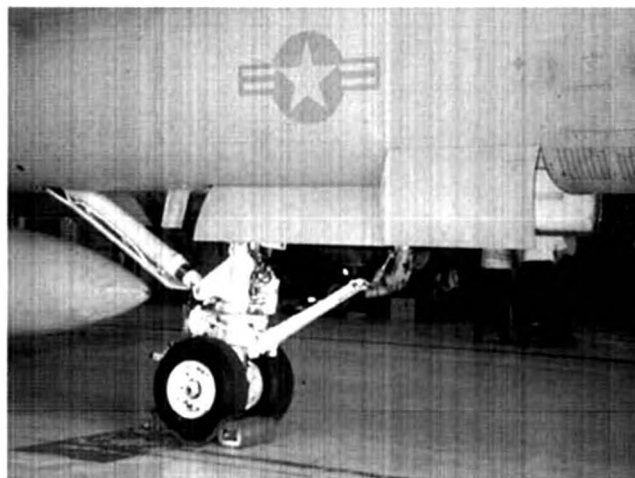
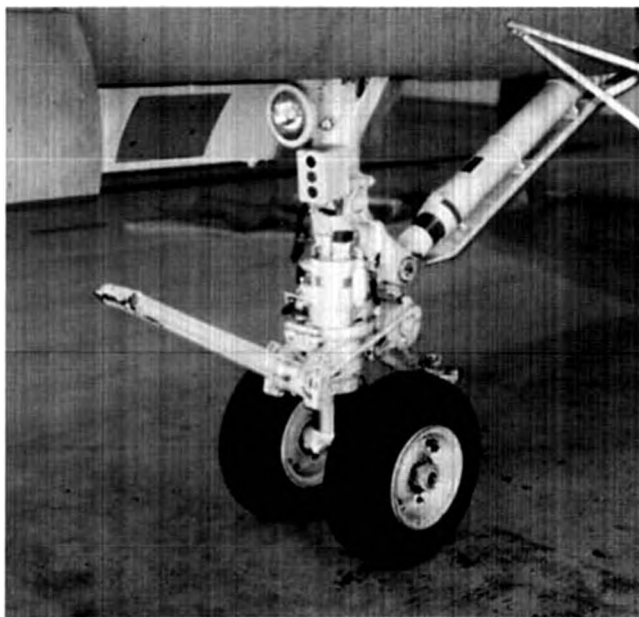
This close-up shows the raising and lowering mechanism for the two-seat canopy and the area just behind the rear seat.



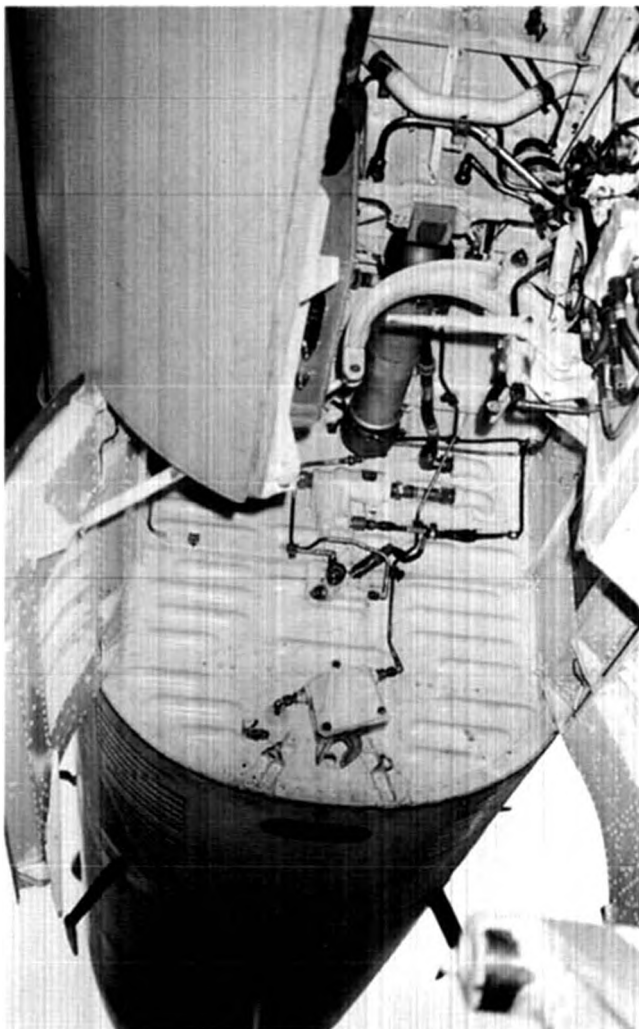
Further details of the two seat canopy can be seen in this rear view.

LANDING GEAR DETAILS

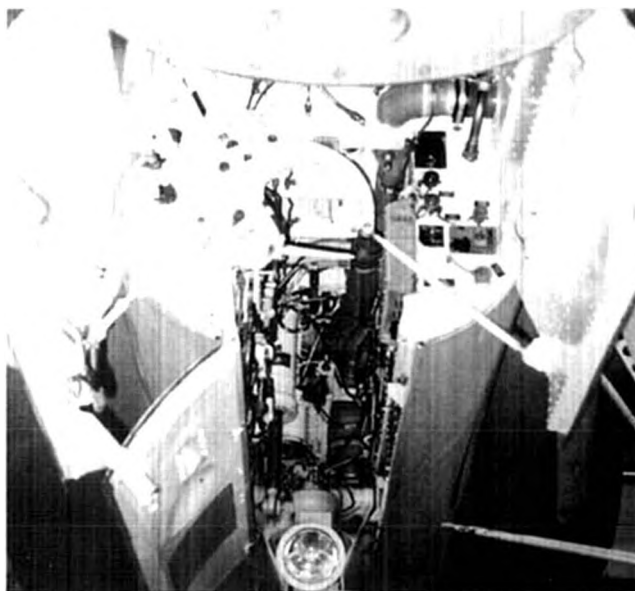
NOSE LANDING GEAR



Above left and right: These two photographs show details of the Hornet's nose gear. In the photo at left, the catapault launch arm, attitude indicator lights, and landing light are all visible. The overall view at right shows the arrangement of the nose gear doors. These two photographs were taken of an F/A-18A.



More details of the nose landing gear can be seen from this view that was taken from behind and to the left.

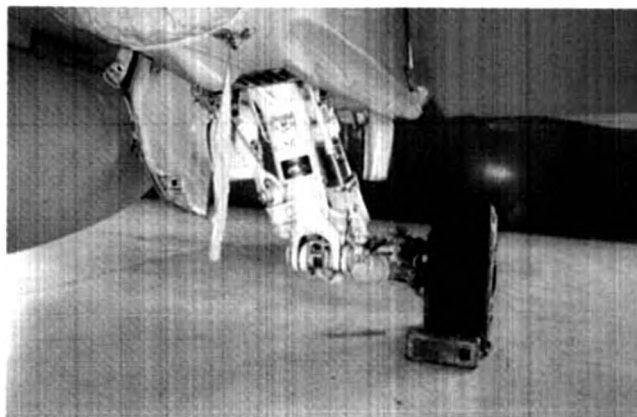


Details of the nose gear well can be seen in these two views. The photograph at left looks forward, and the one at right looks aft into the well. The landing gear retracts forward into the well. The interior of the wheel wells on the Hornet are painted gloss white, and the doors are outlined in gloss red.

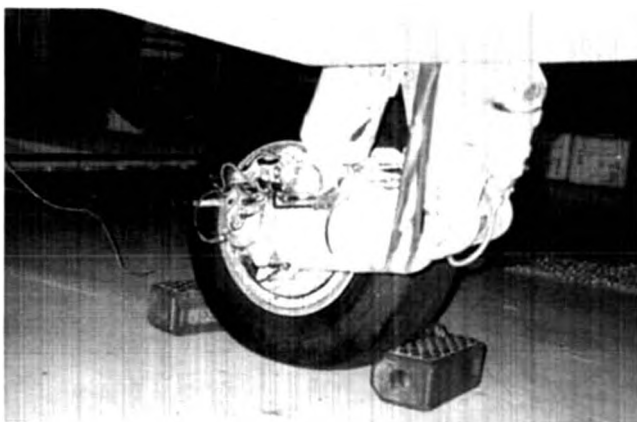
LEFT MAIN LANDING GEAR



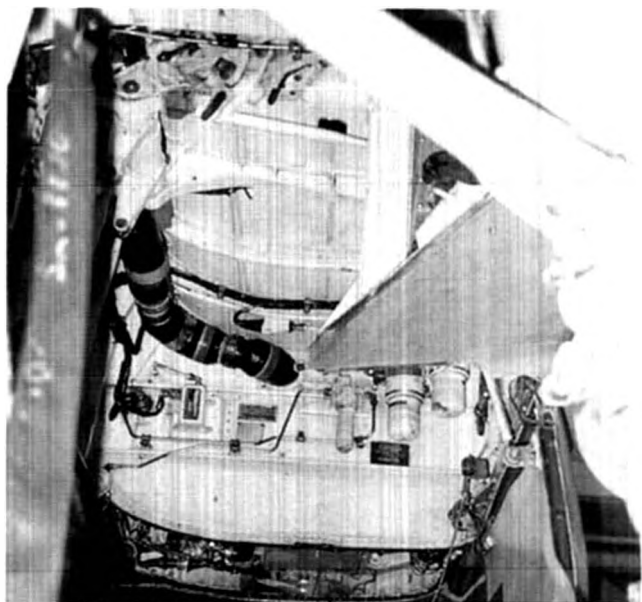
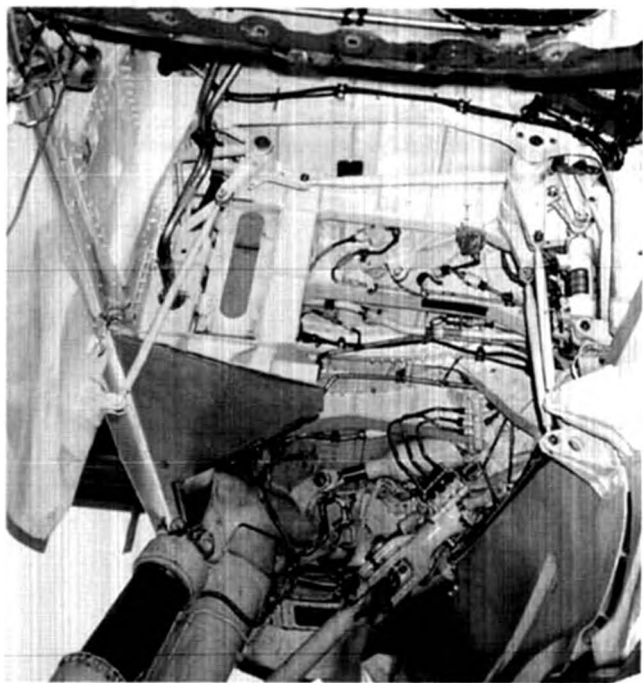
An overall view of the left main landing gear shows the struts, wheel and tire assembly, and the inside of the forward door.



The unusual design of the main landing gear strut is illustrated in this front view. Although it is rather complex, the strut is very strong and durable.



The inside of the left main wheel and strut are shown here. Like the inside of the wells, the struts and both sides of the wheel are painted gloss white.

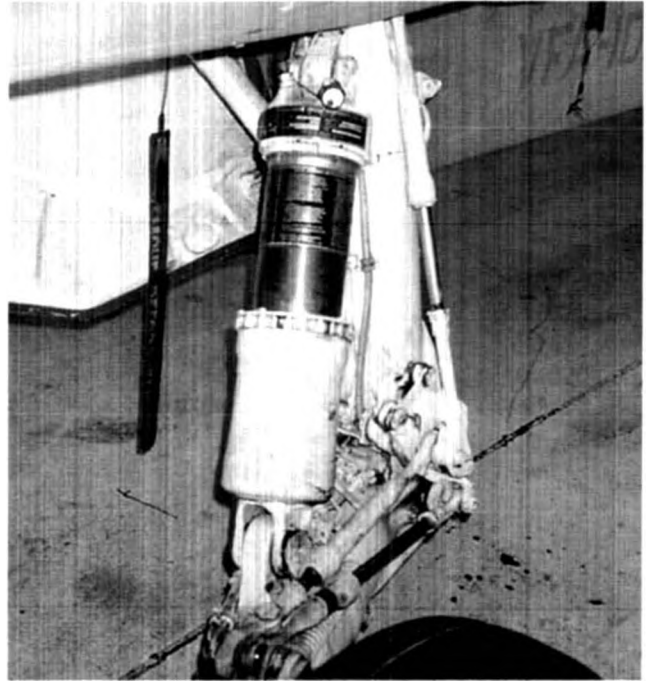


These two photographs show the details of the well for the left main landing gear. At left is a view that looks forward into the well, and at right is a view looking aft. The triangular shaped part of the underside that extends into the well from the outboard side permits mounting of an AIM-7 Sparrow missile. The inboard wing of the missile covers this triangular area when it is installed.

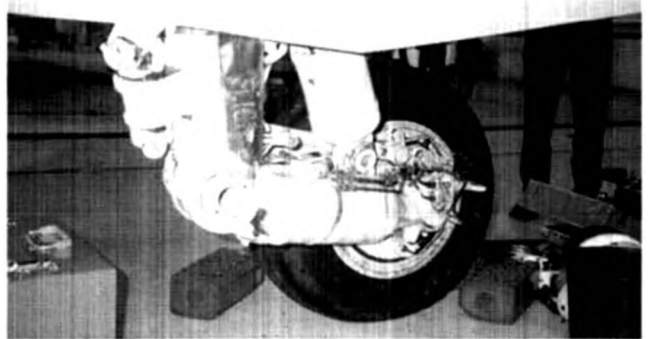
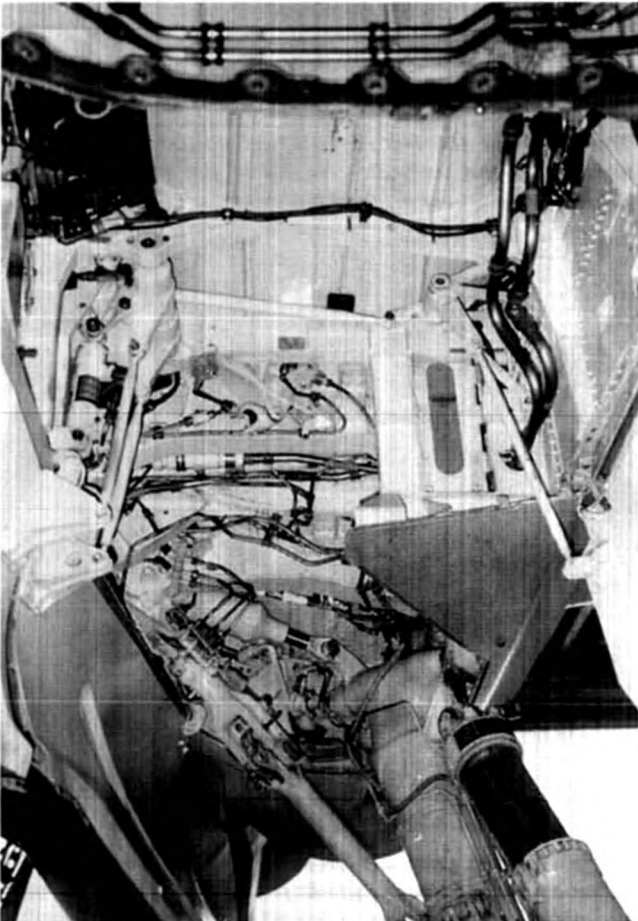
RIGHT MAIN LANDING GEAR



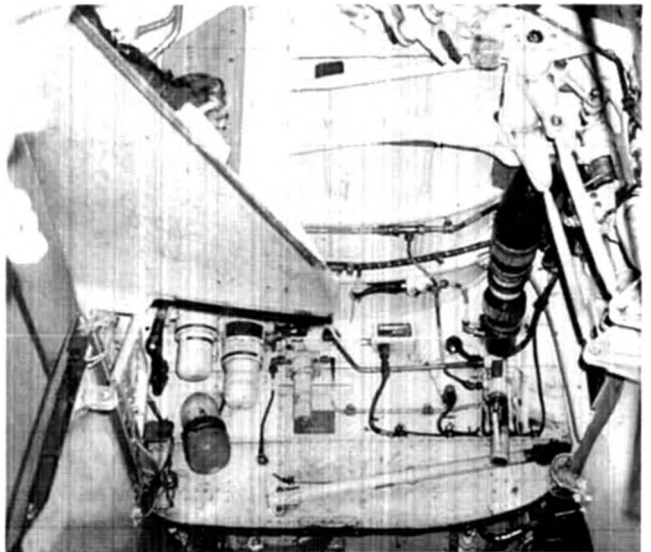
The right main landing gear is essentially a mirror image of the left. In this photograph, the wheel and tire have been removed, and the brakes are visible.



The shock absorbing oleo portion of the right main gear can be seen here.



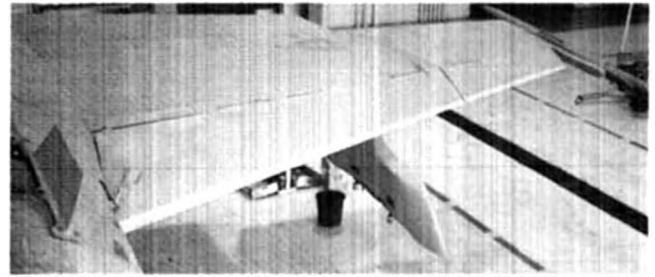
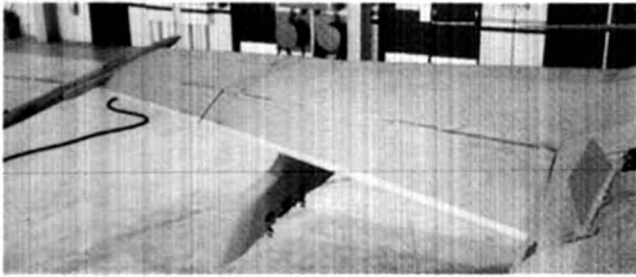
Hydraulic lines and other details of the inside of the right main gear are illustrated in this view.



At left is a view looking forward into the right wheel well, while the photograph at right looks aft into the same well.

WING DETAILS

LEADING & TRAILING EDGE DETAILS



All variants of the Hornet have full-span leading edge flaps on the wings. When the aircraft is at rest, these flaps are usually in the lowered position as shown here. The photograph at left shows the flaps on the right wing, while the leading edge flaps on the left wing can be seen at right.



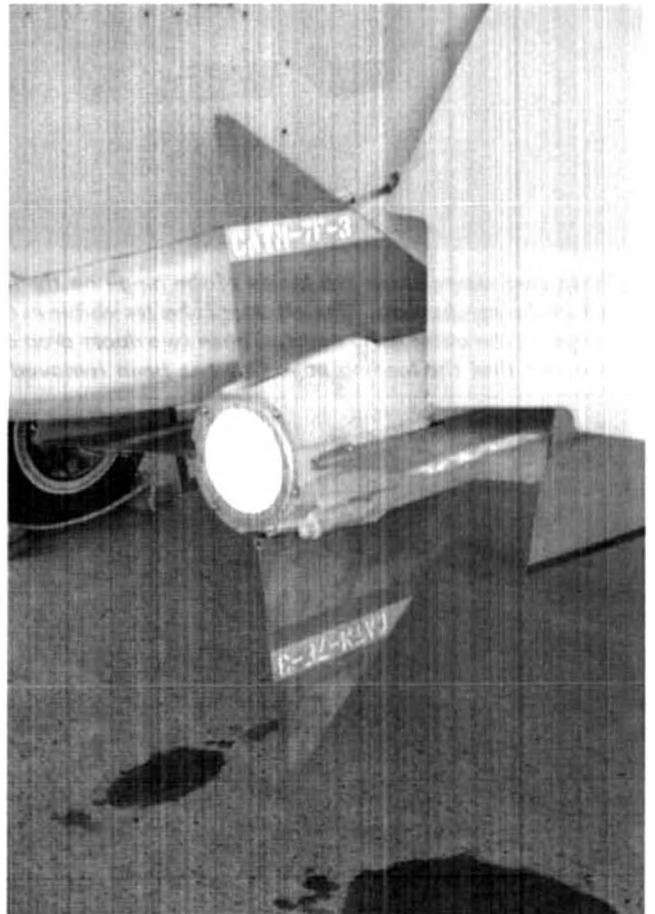
The flaps and ailerons extend over the full span of the trailing edge of each wing. They are also lowered as shown here when the aircraft is at rest.



The hinges on the right aileron are illustrated in this photograph. Those on the left aileron are a mirror image of this.

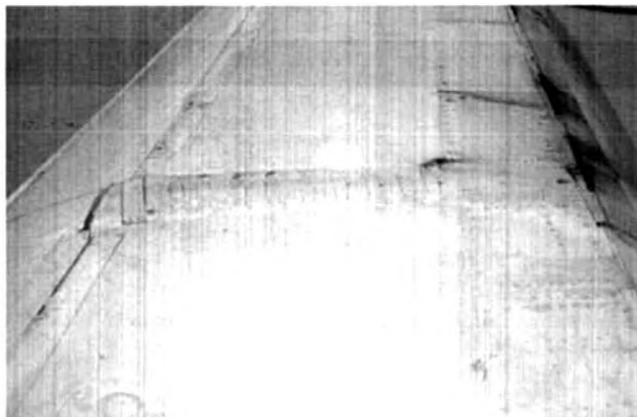
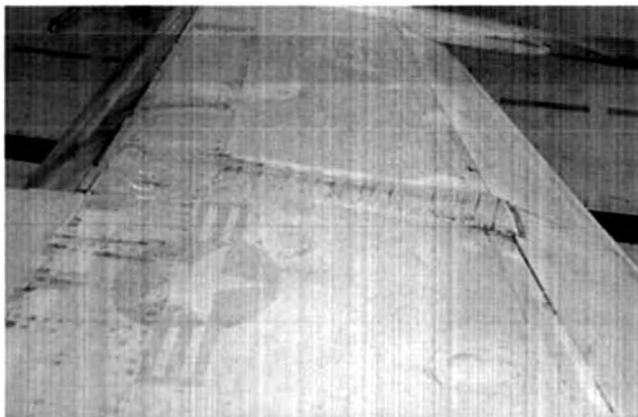


A fairing is located on the underside of each wing just outboard of the wing fold mechanism. The inboard hinge for the aileron is attached to it, and the dark triangular area at its forward end is a position light. The one on the right fairing is green, and the one on the left fairing is red. Also note the location of the national insignia under the right wing.

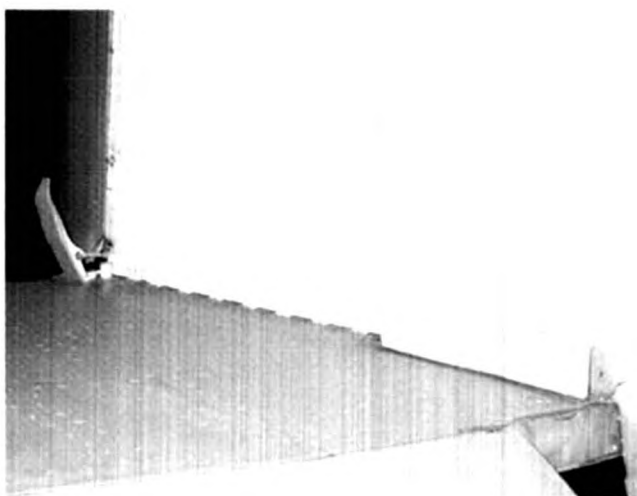
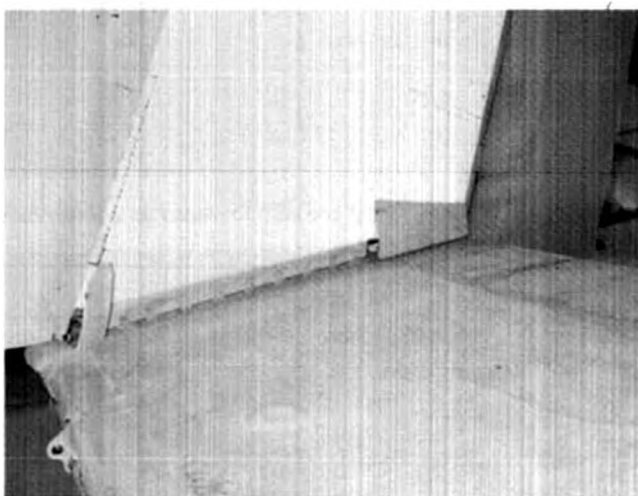


There is a notch cut out of the trailing edge of each flap at the inboard end. This notch is to allow the flap to fit around the fins of a Sparrow missile when it is in the fully lowered position as shown here. (Rotramel)

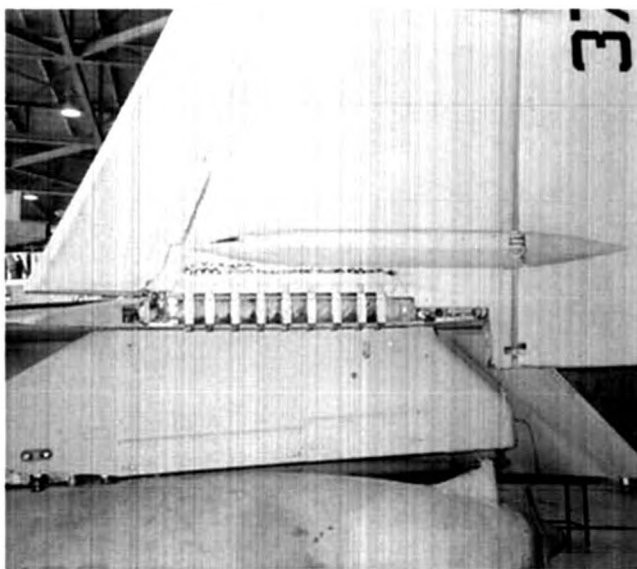
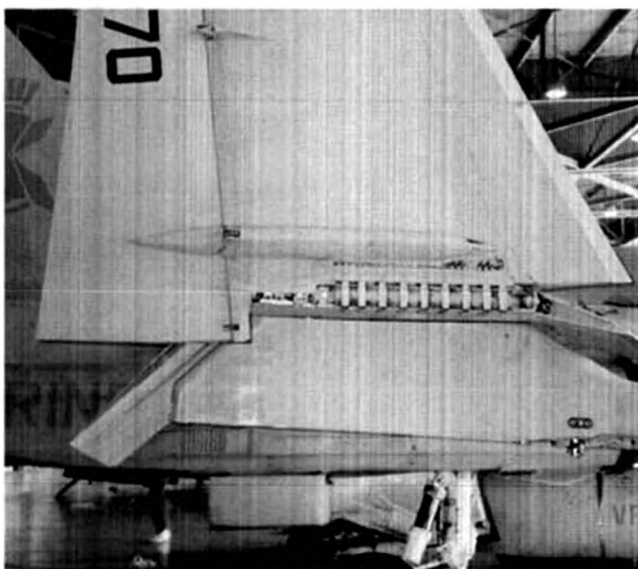
WING FOLD MECHANISM



The wing fold hinges for both wings are shown from above in these two photographs. The left wing is at left, and the right wing is at right. In both cases, the wings are in the extended position. Also note the correct location for the national insignia on the top of the left wing.

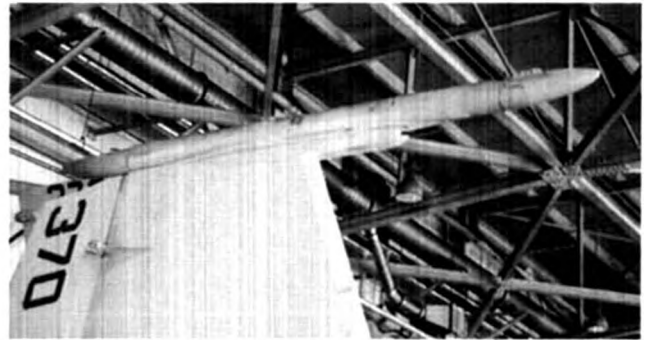
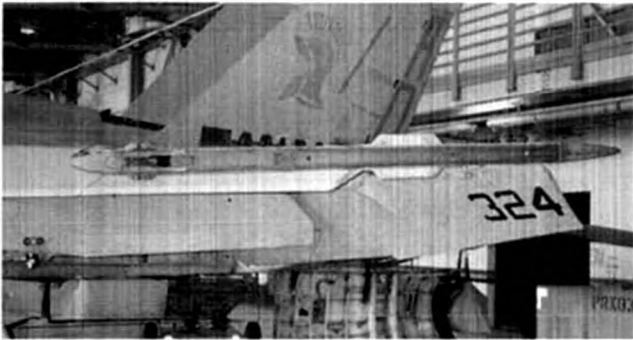


These two views show the inside of the hinge on the left wing in the folded position. Note the two doors that cover part of the mechanism. The aft door is better visible in the photo at right, because it is painted gray instead of the same orange as the outer wing panel. These two doors drop down flush with the hinge when the wing is extended. It should be noted that the leading edge flap has been removed from the aircraft in the photo at left. (Both Rotramel)

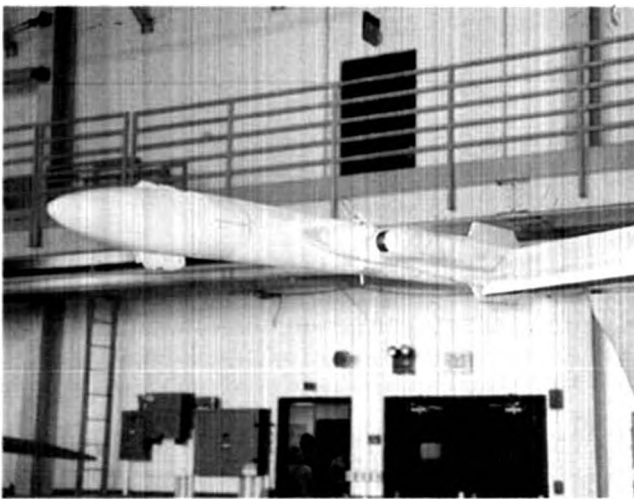


Both hinges are shown here from the outside with the wings in the folded position. Note how the aileron drops down below the hinge.

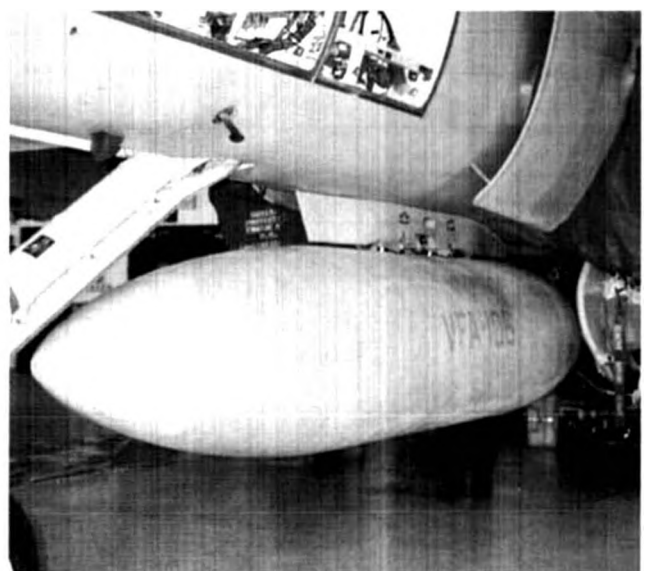
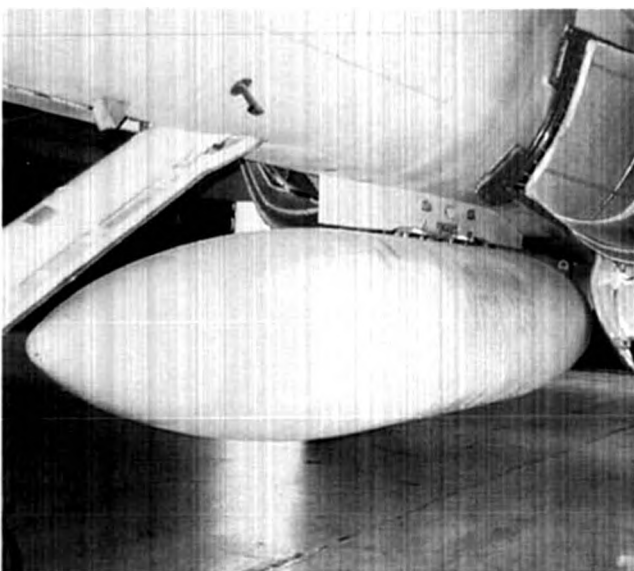
LAUNCH RAILS & PYLONS



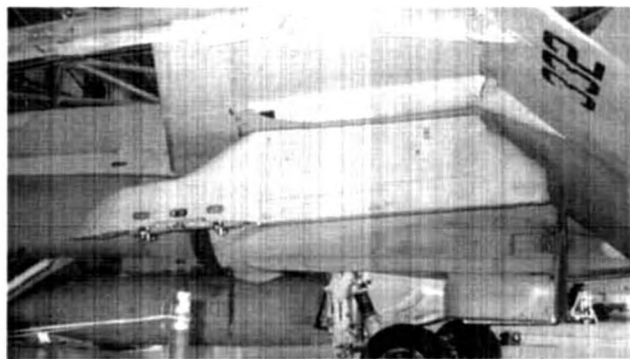
LAU-7 launch rails for AIM-9 Sidewinder missiles are attached to each wing tip. TACTS instrumentation pods can also be carried on these stations which are numbered one and nine on the Hornet. At left is an outside view of the launch rail on the left wing. This outer side of the rail where the missile attaches is a steel gray color. Extending above and below the rail at approximately its center point are small formation light panels. At right is a view of the rail on the right wing as seen from below with the wing in the folded position.



These photographs show the inside forward end of each launch rail. Note that there is a small position light located at the forward end of the thickest portion of each rail. The light on the right launcher is green, while the one on the left rail is red.

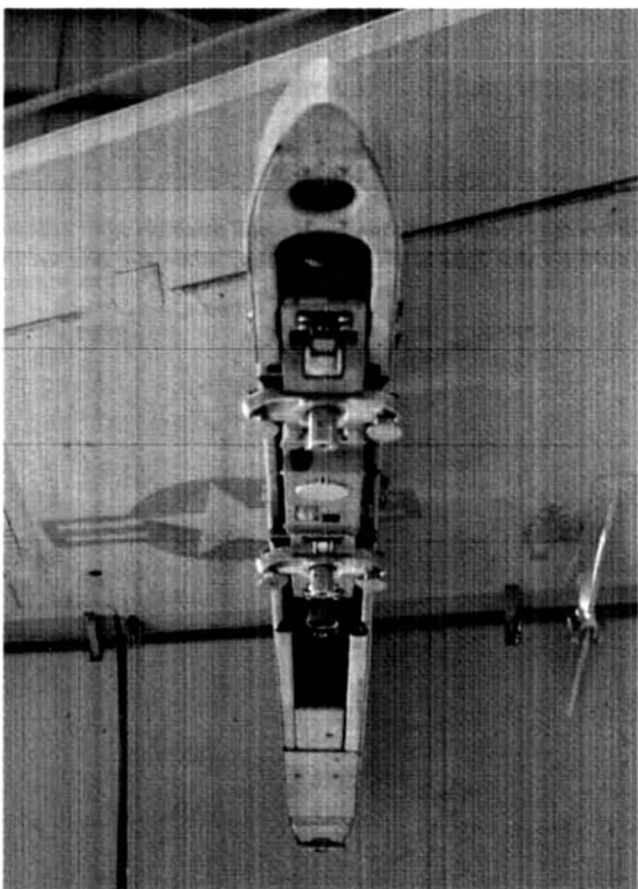
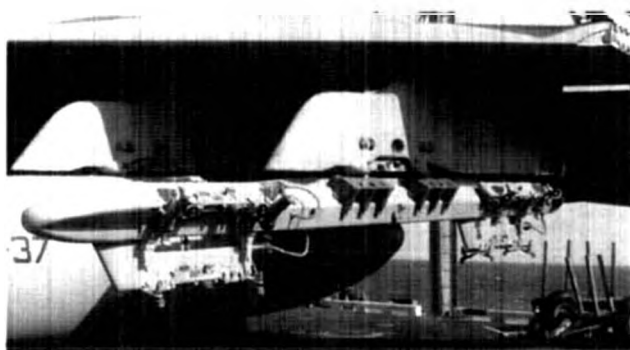


There are two variations of the SUU-62 centerline pylon used on the F/A-18 Hornet. At left is the original pylon, while at right is the newer design. The newer pylon can be distinguished by its leading edge which is angled aft. Both pylons have the standard 330-gallon fuel tank attached. The centerline hardpoint is station 5.

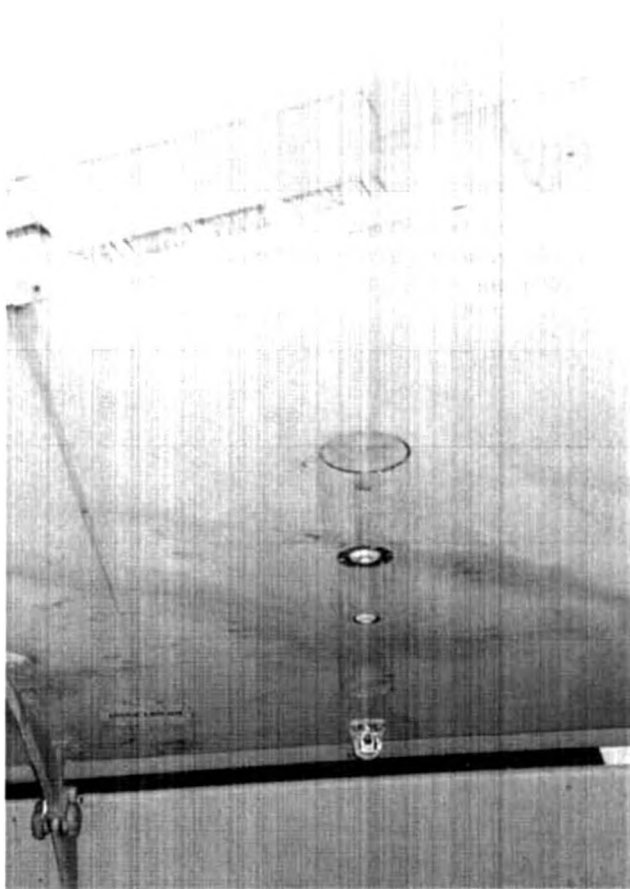


Four SUU-63 pylons can be fitted under the Hornets wings on stations 2, 3, 7, and 8, and each can carry up to 2,600 pounds of stores. Left and right side views of SUU-63s are provided here. Note how the aft end of the pylon is angled so as to permit the flaps to be fully lowered.

Right: A multiple ejector rack (MER) can be attached to each SUU-63 pylon. However, it is important to note which stores can be delivered from the racks. Although Hornets displayed for publicity photographs or an open house often have MERs loaded with Mk-82, 500-pound bombs, this configuration is not certified for carriage or delivery by Hornets. Modelers in particular should note this fact. The only stores certified to be carried and delivered from MERs on F/A-18s are small practice bombs, Mk 58 marine locator markers, the LUU-2 paraflare, and the laser guided training round (TGTR).



A BRU-32 bomb rack is located inside each pylon, and it can carry stores between ten and twenty-eight inches in diameter.



The mounting position for an SUU-63 pylon is shown here beneath the wing. Hornets are often seen with their inboard wing pylons removed.

COLOR GALLERY

HORNET PAINT SCHEMES



Production Hornets were originally delivered in the three-tone gray scheme shown here. The lightest gray was Federal Standard 36495, and it was applied to the undersides of the aircraft. Although the official drawing for this scheme specified that the outer surfaces of the vertical tails also be painted in this color, it appears that this was seldom done in practice. Instead, the middle shade of gray, which is Light Ghost Gray, 36375, was painted on both sides of the vertical tails. This gray was painted on the upper surfaces, and it also extended beneath the leading edge extensions. This can be seen beyond the boarding ladder in this photograph, and looking for this feature was the easiest way to identify this scheme. The darkest gray was 35237, and it was used only on the anti-glare panel. Note the small practice bombs on the MER carried by this F/A-18A. (Roth)



A new tactical paint scheme has replaced the one shown above, and officially it also has three shades of gray. However, the shades are so close that it is often very difficult to tell where one ends and the other begins. The lightest shade is Light Ghost Gray, 36375, which was the middle shade on the earlier scheme. This gray is painted on the undersides of the aircraft and the outer surfaces of the vertical tail. The middle shade of gray in the new scheme is Dark Ghost Gray, FS 36320. It is applied to all upper surfaces and the insides of the vertical tails, but it does not extend back along the sides of the aircraft beneath the leading edge extensions. As with the previous scheme, the third shade of gray is 35237, and it is used only for the anti-glare panel. Observations of operational Hornets reveal that in actual practice, Dark Ghost Gray is applied to both sides of the vertical tails and often on the anti-glare panel. This F/A-18A carries the markings of VMFA-122 and appears to be freshly painted. (Flightleader)



For the most part, Hornet markings are limited to black and various shades of contrasting grays. However, there have been a few instances where units have taken the liberty to apply colorful markings to at least the CAG aircraft in their squadron. Every squadron in Carrier Air Wing Fourteen aboard the USS INDEPENDENCE, CV-62, painted the vertical tails of their CAG aircraft black and applied colorful markings. This had also been done by CVW-14 during a previous cruise aboard the USS CONSTELLATION, CV-64. The CAG aircraft from VFA-113 is shown here, and this is about as colorful as a Hornet in a fleet squadron ever gets. Hornets from VFA-25, which is the other F/A-18 squadron in the air wing, can be seen in the background. (Roth)

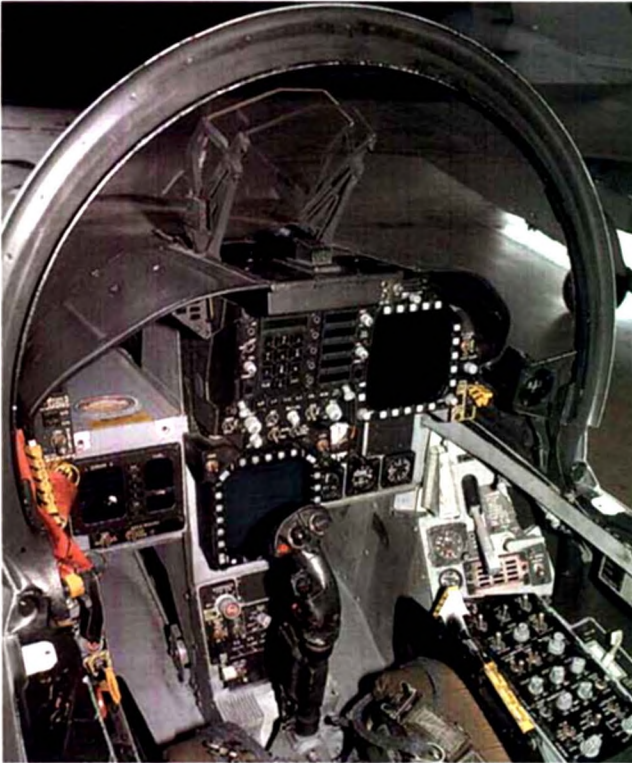


*This F/A-18D has colorful markings for the commander of VFA-106, the training squadron for the Atlantic Fleet. **MARINES** is lettered on the right side of the fuselage, and **NAVY** is on the left side, because both services train with VFA-106. This aircraft has a modex of 000 and is often confused with an F/A-18B with similar markings. The F/A-18B carries a 300 modex, and a photograph of it can be found on page 16.*



Some F/A-18A and F/A-18B Hornets are now being used as threat simulators in air-to-air combat training exercises. The F/A-18B in the photograph at left is from VFC-13 and is painted in a typical Middle East camouflage scheme. The F/A-18A at right is assigned to VFC-12 and has a blue and gray paint scheme similar to that seen on Russian Su-27 Flankers. Both aircraft have large angular intakes and "clipped" vertical tails painted on them to make them appear more like Russian aircraft. Also note the vents painted in black on the leading edge extensions. These vents are a feature found on the MiG-29 Fulcrum. (Both Rotramel)

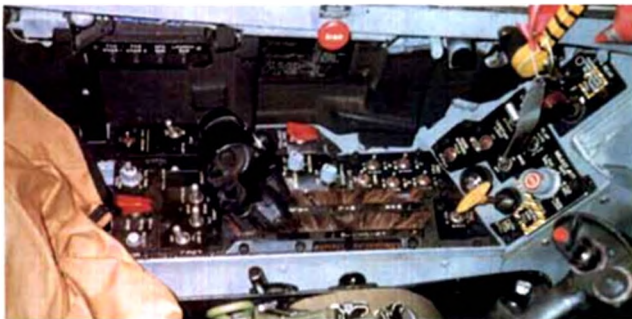
F/A-18C COCKPIT DETAILS & COLORS



Colors and details of the forward instrument panel and HUD in an F/A-18C are visible in this photograph. Note that the multi-purpose display at the top left corner of the instrument panel has been removed. An instrument panel in an F/A-18C with this display installed can be seen on the rear cover. Also notice that the HUD has two pieces of glass.



This close-up reveals details of the control column.



The throttles and other details on the left console are revealed here. Note the numerous buttons and switches on the throttles which allow for "hands on stick and throttle" (HOTAS) operation of the aircraft.



The right console in an F/A-18C is shown here.

Right: Behind the seat is a compartment that houses several black boxes. These include a video recorder, a radio, the chaff program sequencer, and the memory unit recorder module. This is similar to the flight recorders on commercial airliners. Usually this compartment is covered with a wire mesh screen, but in this case the screen has been pulled back revealing a portion of the interior of the compartment.



F/A-18D COCKPIT DETAILS & COLORS

FRONT COCKPIT ALL AIRCRAFT



REAR COCKPIT STANDARD CONFIGURATION



At left is the instrument panel in the forward cockpit of an F/A-18D. It is practically identical to the F/A-18C cockpit. Note that the control column was removed from the forward cockpit when this photograph was taken, thus providing an unobstructed view of instrument panel. The control column in the front cockpit of an F/A-18D is the same as the one in the F/A-18C shown on the previous page. At right is the instrument panel in the aft cockpit of an F/A-18D as used in the standard configuration.



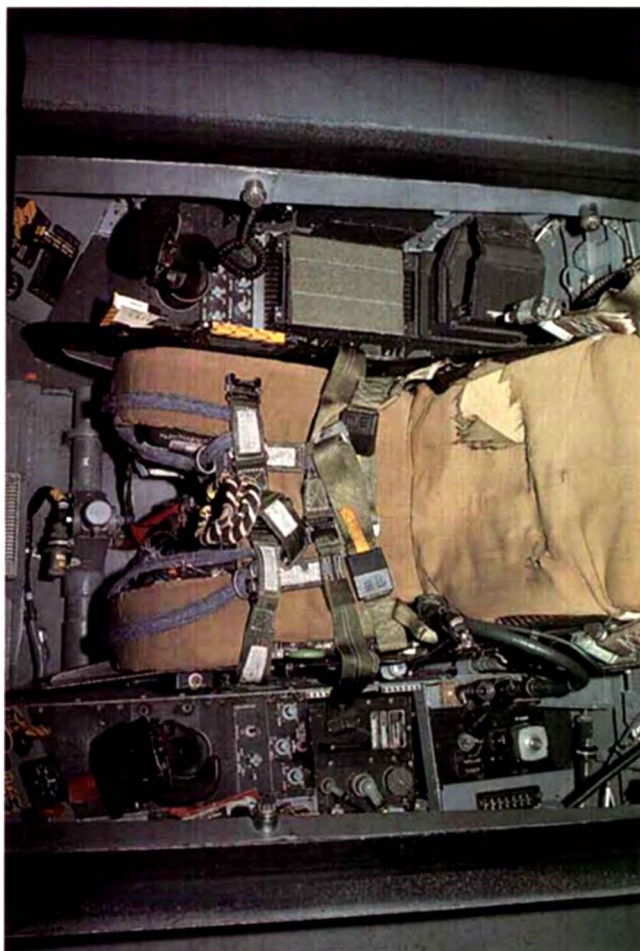
The left console in the forward cockpit of an F/A-18D is shown at left, while at right is the standard configuration for the left console in the aft cockpit.



The photograph at left shows the right console in the front cockpit. At right is the standard configuration for the right console in the aft cockpit.

REAR COCKPIT NIGHT ATTACK CONFIGURATION

Block 29 and subsequent F/A-18Ds are night attack capable. They can be configured with the rear cockpit shown on the previous page, but they are usually configured as shown in these three photographs. The conventional center control column and the throttles are removed, and two controllers are placed on the side consoles. The right controller is visible in this photograph, and the top of the left controller is also partly visible. The multi-purpose display repeater, located low and in the center of the panel on standard F/A-18Ds, has been deleted, and a new CRT, known as the color multi-purpose display, has been added at the top center of the panel. The rear advisory and threat warning indicator panel runs along the top of the instrument panel. (Roth)



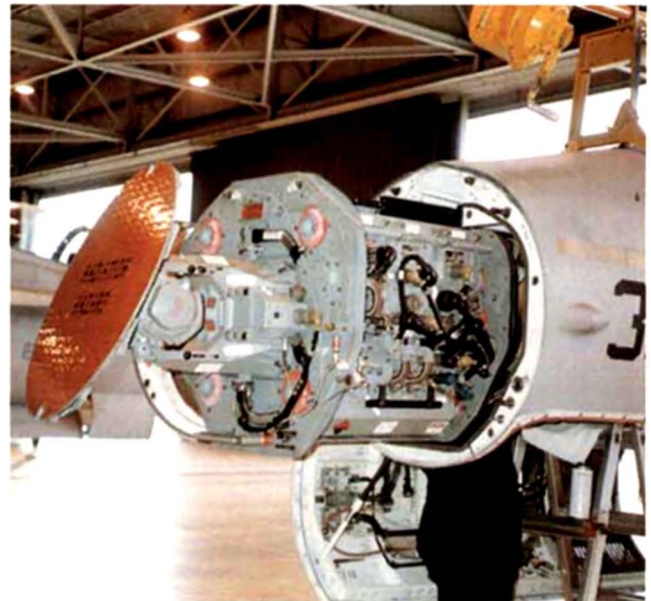
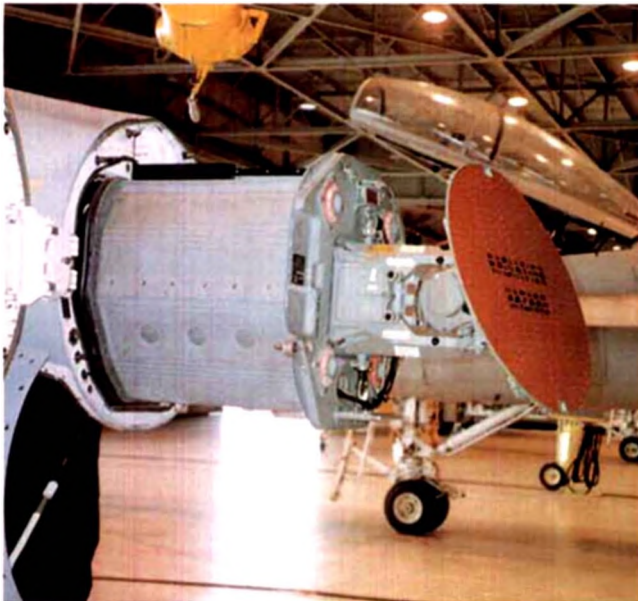
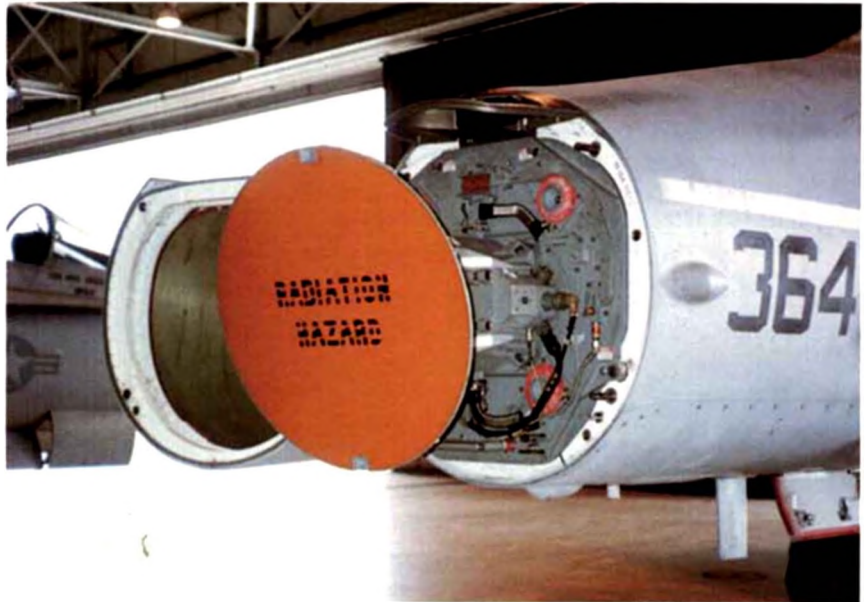
This unusual view looks straight down into the night attack cockpit. The two side controllers are visible as are other details on the two consoles. The socket for the conventional control column can be seen on the floor just forward of the seat. When the control column is not installed, a cover is placed over the socket. (Roth)



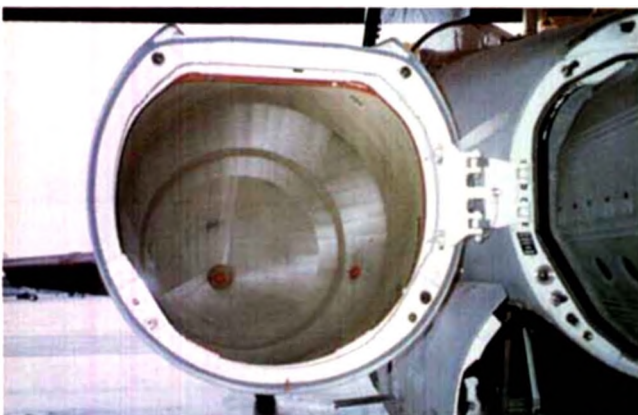
Details and colors of the SJU 17 ejection seat as used in F/A-18Cs and F/A-18Ds, beginning with BuNo. 164196, can be seen here. Additional details of the seat are illustrated in the photograph at left. Drawings of SUU-17 seat can be found on page 23. Also visible are details of the aft bulkhead in the rear cockpit. (Roth)

AN/APG-65 RADAR DETAILS & COLORS

The AN/APG-65 multi-mission radar has 8,000 fewer parts than the radar used in the F-4 Phantom, yet it can detect targets at a twenty-percent greater range. It weighs only 340 pounds and not counting the antenna, takes up just over four cubic feet inside the Hornet's nose section. It can track targets for head-on or tail-on aspects, and has both a look-up and a look-down capability. It is effective in both air-to-air and air-to-surround engagements. It has long-range mapping and terrain-avoidance modes.



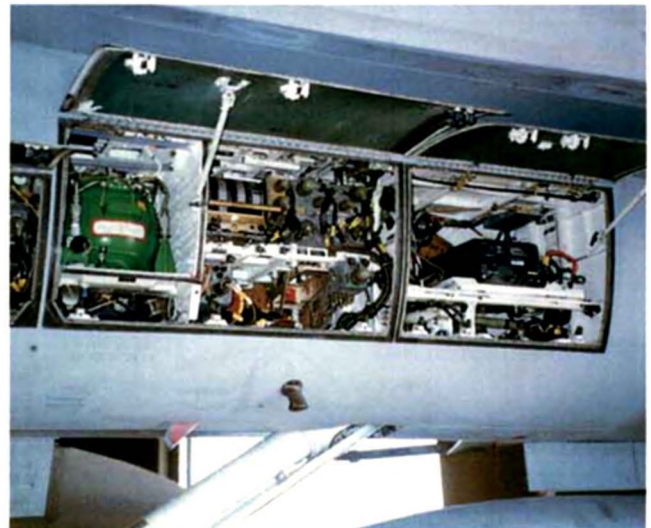
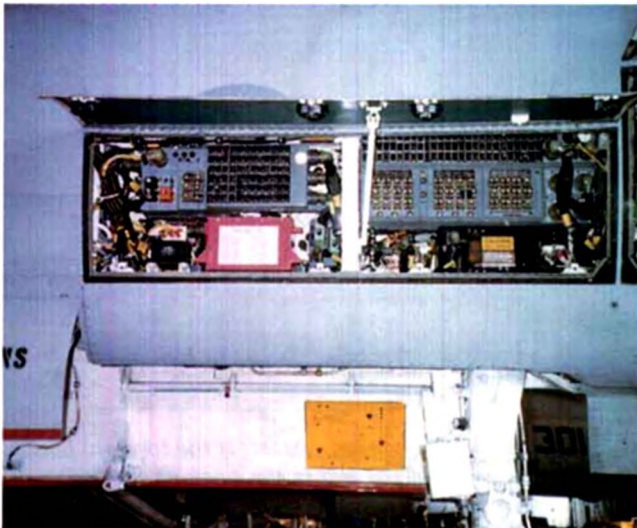
These two photographs show left and right side views of the radar which can be pulled out of the nose section for easy maintenance.



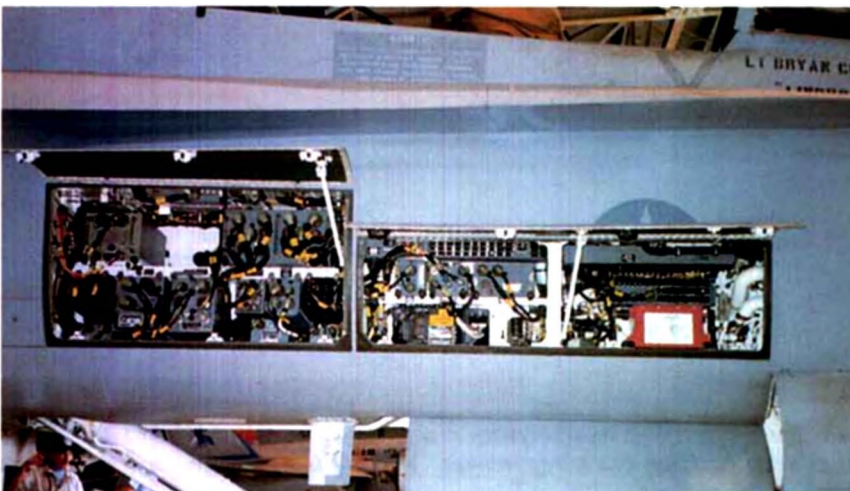
The unusual colors and patterns of the radome's interior are shown at left, while the brace that holds the radome in place is illustrated at right. Also note the hinge to which the radome is mounted.

AVIONICS BAYS

The avionics bays on the left side of the forward fuselage look like this on F/A-18As and F/A-18Cs. This particular photograph was taken of an F/A-18C.



On two-seat Hornets, the bays on the left side of the aircraft are almost identical to those on the single-seat versions. The one noticeable difference is behind door 14, which is the aft-most door. Because there is no room for a bay behind the rear seat on the F/A-18B and D versions, the video tape recorder is located in bay 14. It is the black box that is mounted on the shelf in the photograph at right.

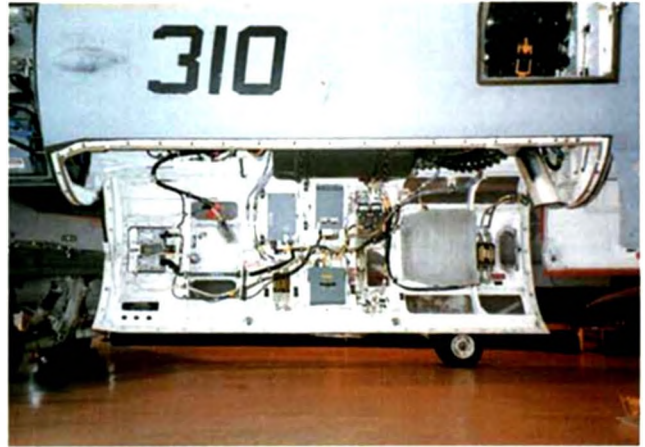


The bays on the right side of the forward fuselage are the same for all variants. This photograph is of an F/A-18C.

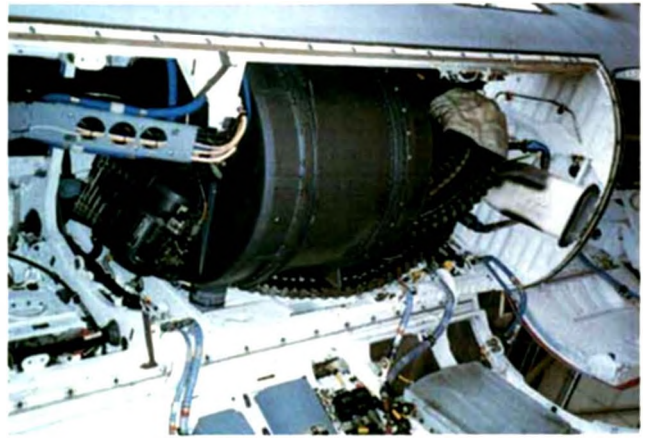
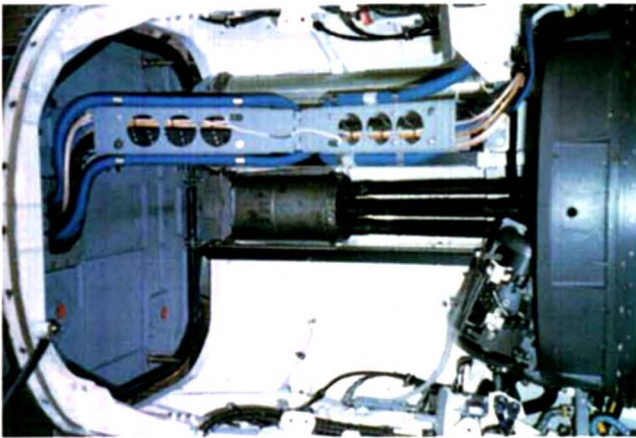
INTERNAL CANNON ARMAMENT



To remove the M61A1 cannon from the aircraft, a winch is attached to the top of the nose section. Its cable is attached to the gun through an open panel, and then the mounts for the gun are removed.



The gun is lowered through this open door. Since the outside of this door has a number of antennas on it, there is a considerable amount of electrical gear on the inside of the door. To install the gun, the procedure is reversed.

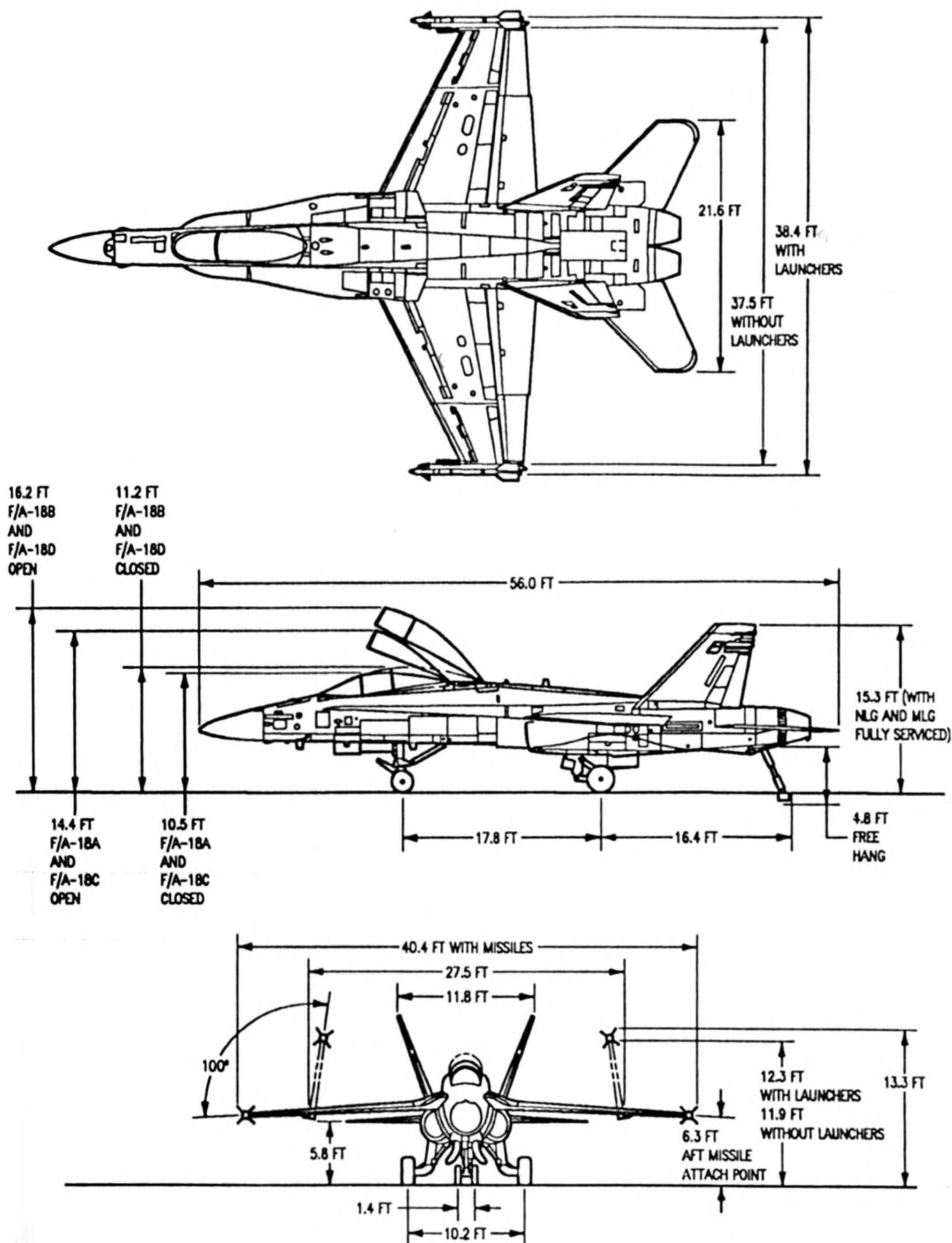


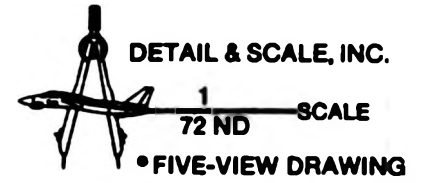
These two photographs were taken looking up into the gun bay with the gun still installed. At left is the forward portion of the gun, and its barrels can be seen at the top of the bay. The gray panel to the left is the back of the radar. At right is a photograph of the aft end of the gun bay showing the drum magazine and the ammunition feed chute.



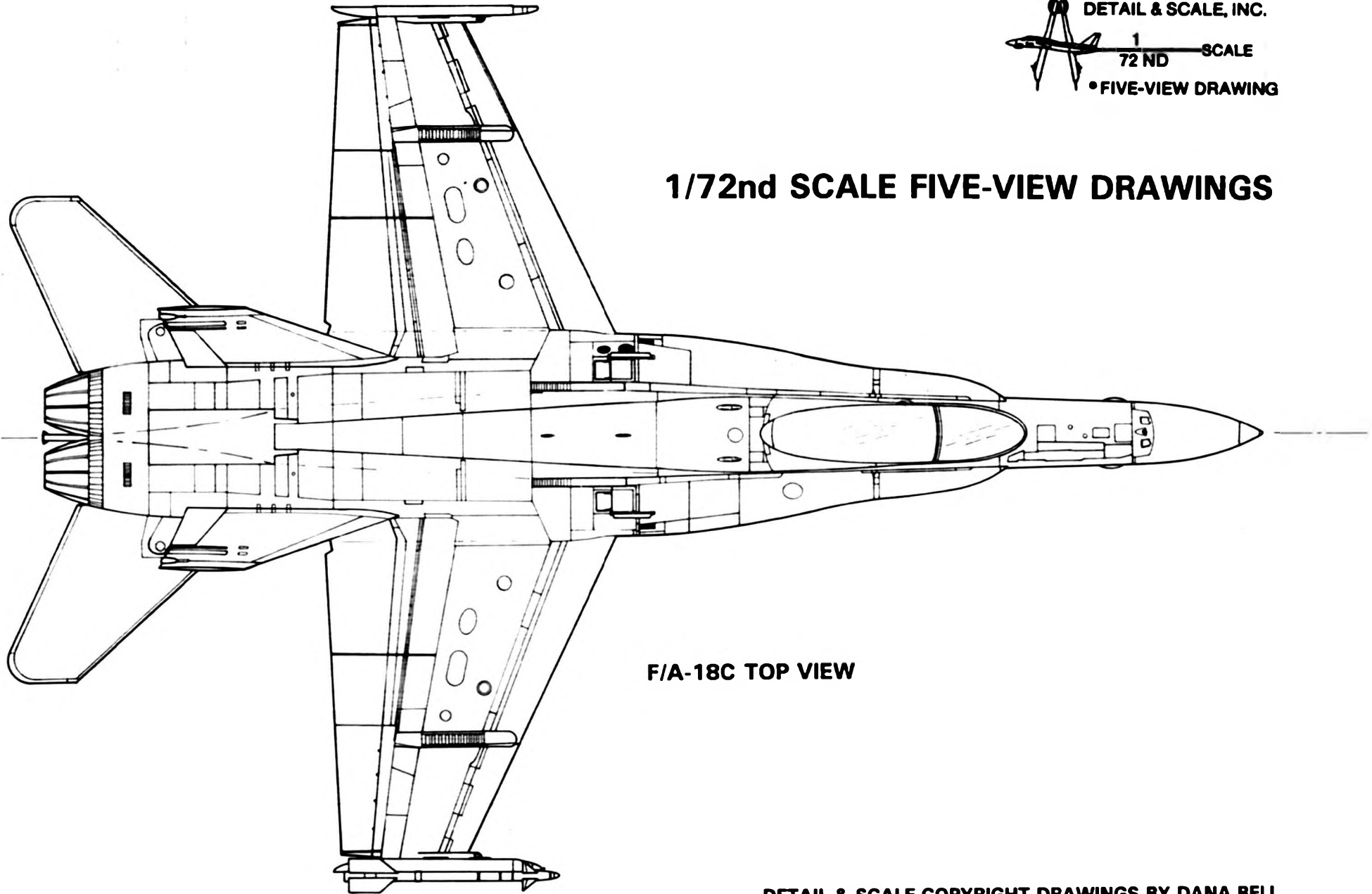
The gun has been completely removed from the aircraft, and is undergoing maintenance in the photo at left. On the floor in the background is the cannon port with its two gun gas purge intakes. At right is a photograph of a left side view of the gun system ready for installation in the aircraft.

DIMENSIONS

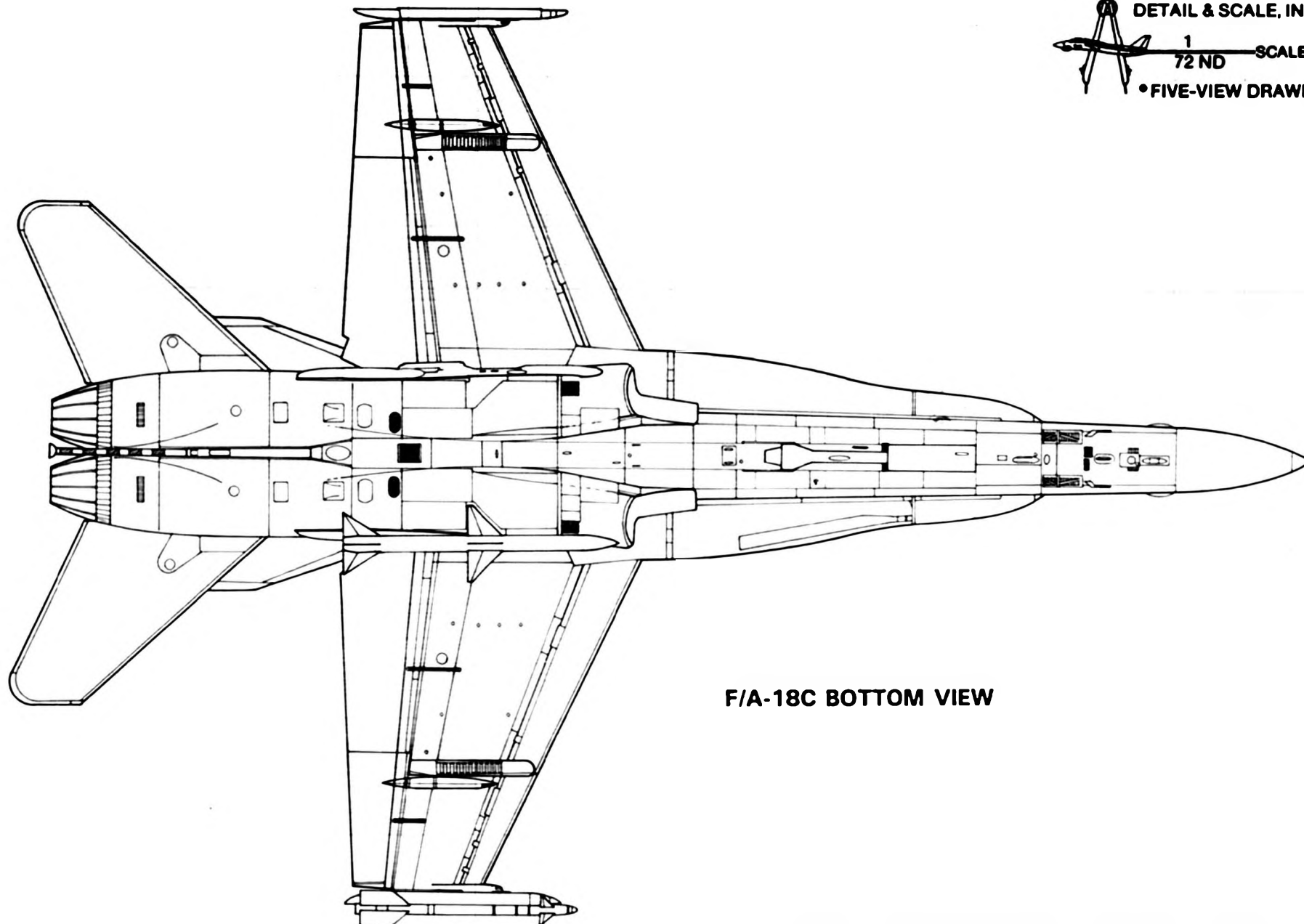




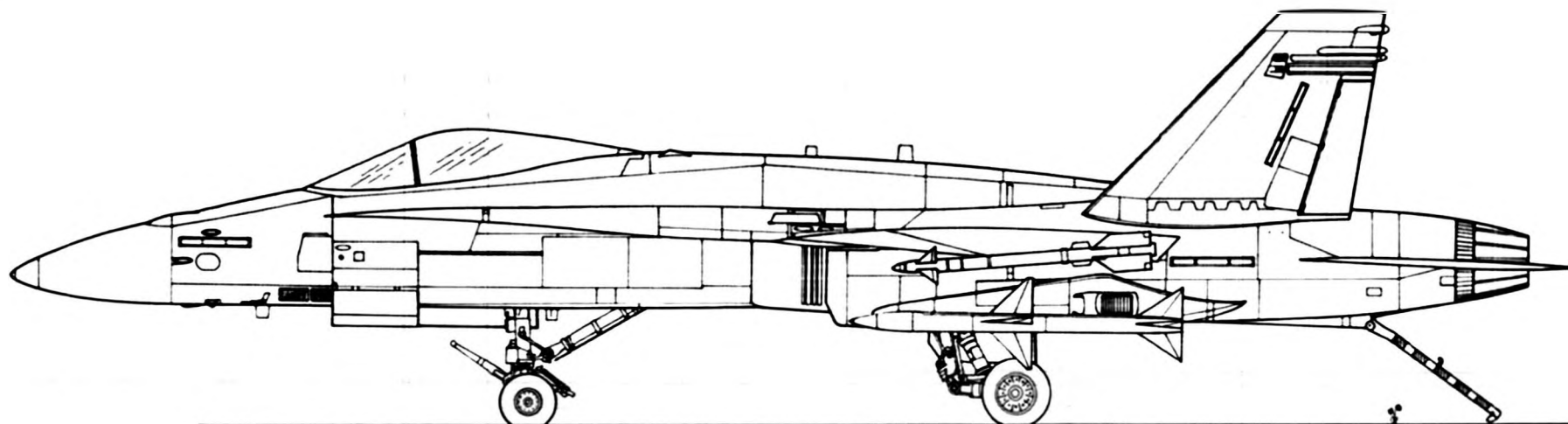
1/72nd SCALE FIVE-VIEW DRAWINGS



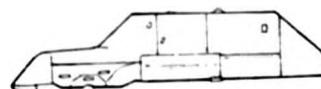
DETAIL & SCALE COPYRIGHT DRAWINGS BY DANA BELL



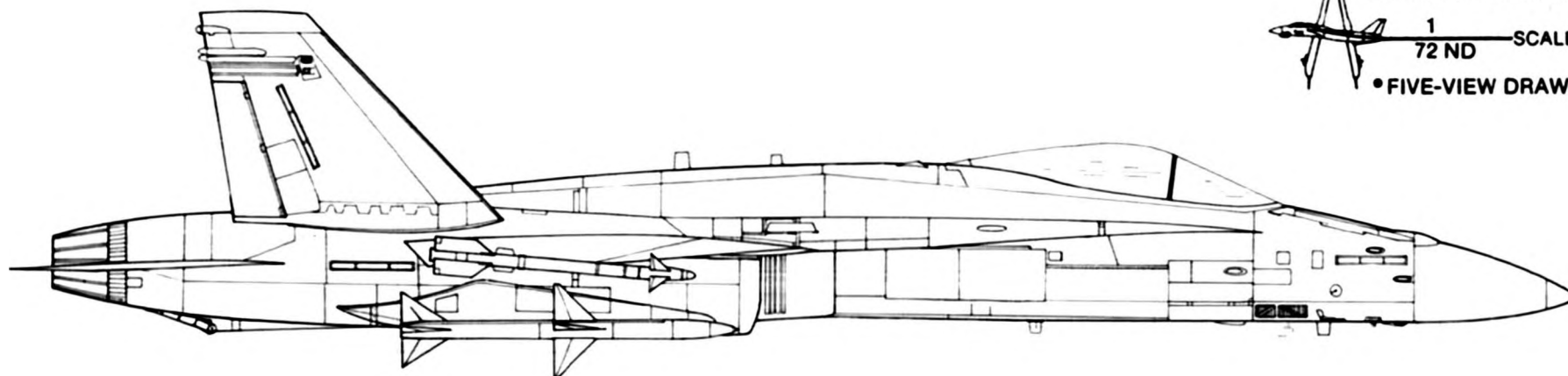
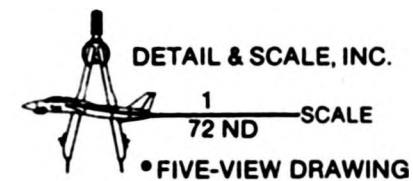
F/A-18C BOTTOM VIEW

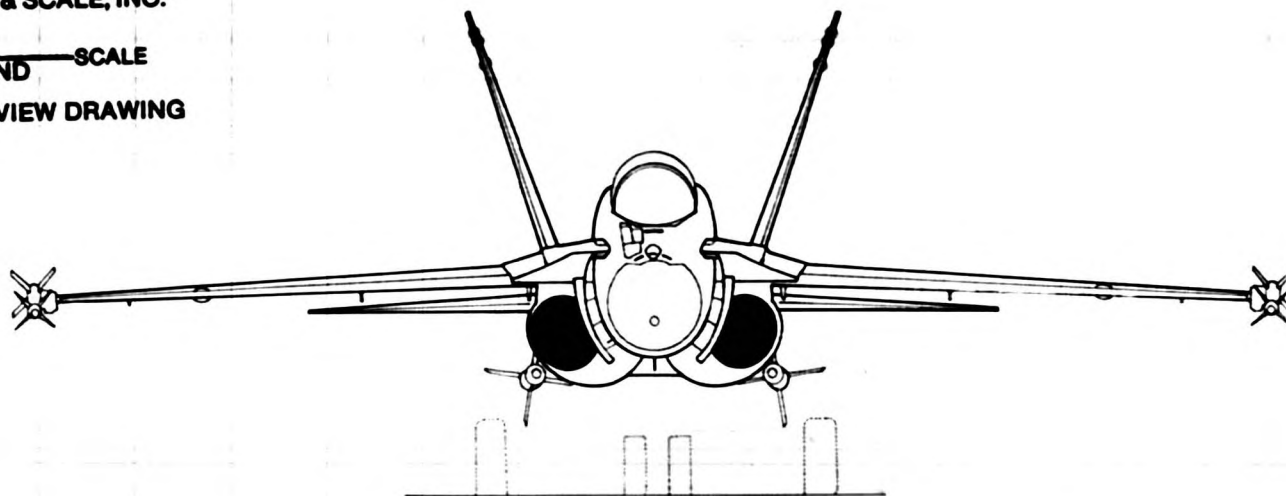
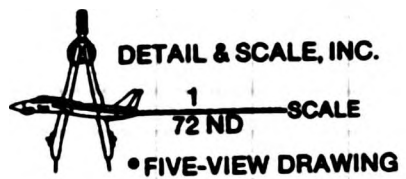


F/A-18C LEFT SIDE VIEW

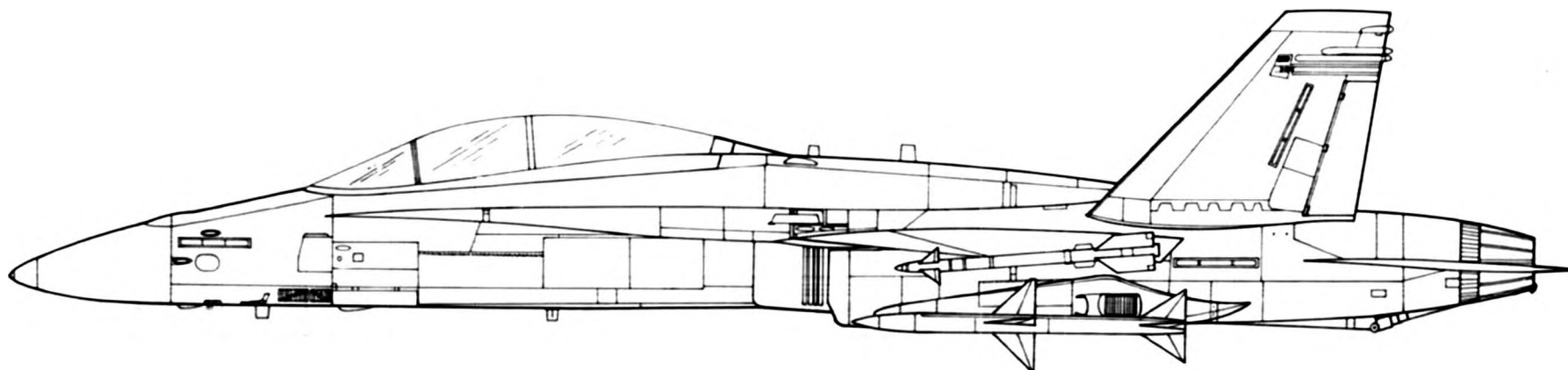


SUU-63 PYLON





F/A-18C FRONT VIEW



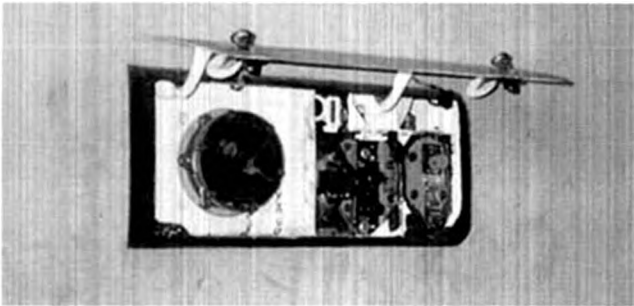
F/A-18D LEFT SIDE VIEW

FUSELAGE DETAILS

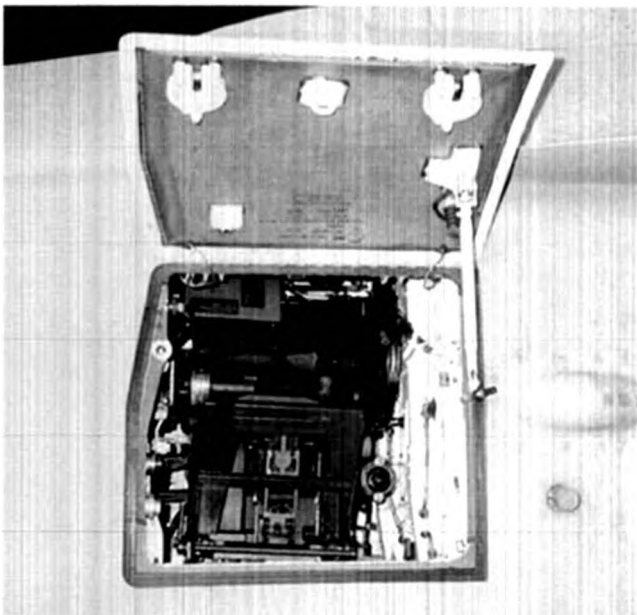
NOSE DETAILS



The right side of the nose section on an F/A-18A is shown here. Just forward of the nose number is a small fairing that is an ALR-67 receiving antenna. The probe just aft of the nose number is an angle of attack transmitter, and the probe below it is a pitot head. The lower UHF/IFF blade antenna can be seen beneath the modex and just forward of the pitot head. A three-segment formation light panel is located just above the modex.



The single point refueling receptacle is on the right side of the nose behind this panel. Collocated with the refueling point is the intercom connection where a ground crewman can plug in a headset and talk to the pilot.



Access to the breach of the cannon can be gained through this access panel on the left side of the nose.



This is the left side of the nose of the same aircraft. The formation light panel is easier to see in this photograph as are the angle of attack transmitter and the pitot head. The vents aft of the pitot head are on both sides of the aircraft and allow gasses to escape when the gun is fired. The fairing on the bottom of the nose directly under the first 3 in the modex is the ventral transmitting antenna for the electronic warfare system. The white spool just aft of it is the radar beacon antenna associated with the automated carrier landing system.



A change has been made to the design of the gun gas vents on the lower gun compartment door. The diagonal bracing and the vanes have been replaced with a series of fine perforations that essentially form a screen over the openings. Compare this new configuration with the older design shown in the photograph immediately above.



The connection for ground electrical power is located on the left side of the nose section. Just forward of it (to the left in the photograph) is a small cylinder extending from the aircraft. When this cylinder is extended, it means that the gun electrical safety switch is in the safe position. Further aft is another cylinder which indicates that power to the chaff/flare dispensers is turned off.

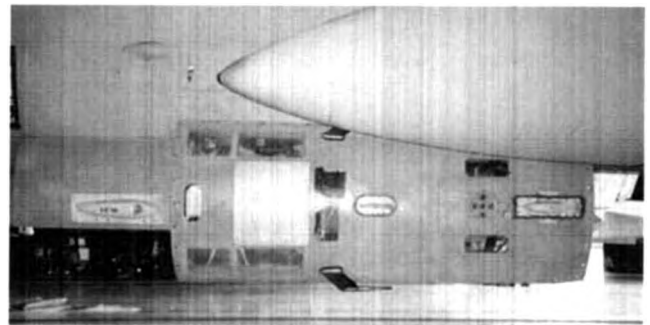


Above the formation light panel on the nose of F/A-18Cs and F/A-18Ds is an additional fairing which is painted white. It is a transmitting antenna for the AN/ALQ-165 airborne self-protection jamming system (ASPJ). Another transmitting antenna is in the same location on the opposite side of the nose. Although the provisions for the AN/ALQ-165 ASPJ were included on F/A-18C and F/A-18D variants, the system was cancelled in late 1992, so it was not installed.

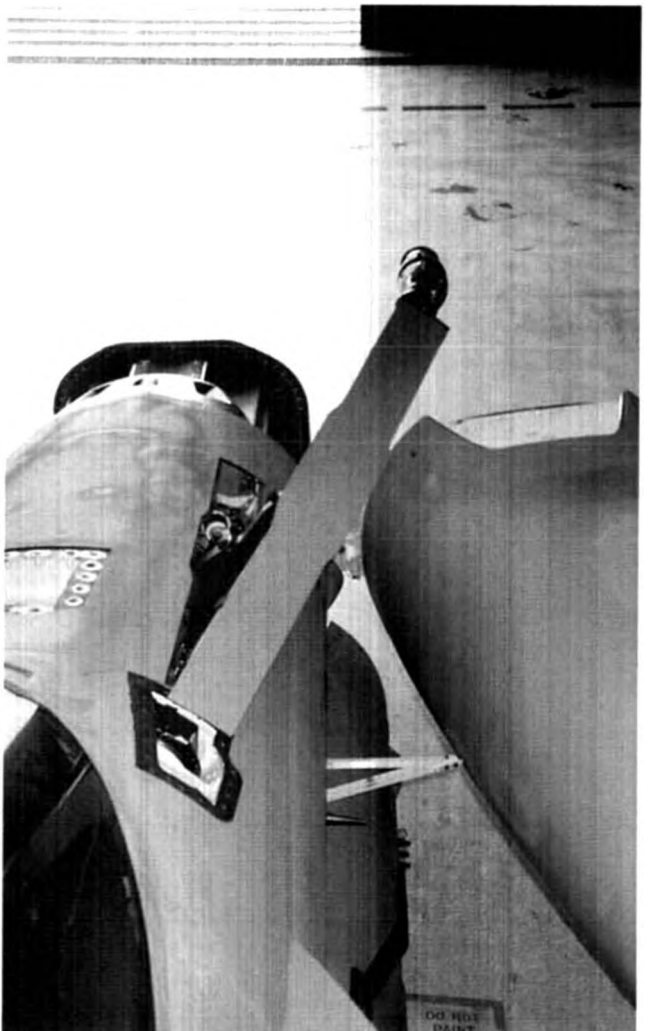
IN-FLIGHT REFUELING PROBE



These three photographs show the in-flight refueling probe from different angles. The well for the probe is painted gloss white, while the probe itself and its bracing are painted gloss red. The probe's nozzle is a dark metallic gray. The open panel on top of the nose, visible in the top left photograph, is the top access to the gun bay and is the opening through which the winch operates to lower the gun system out of the aircraft or to hoist it into position. (See page 40.)



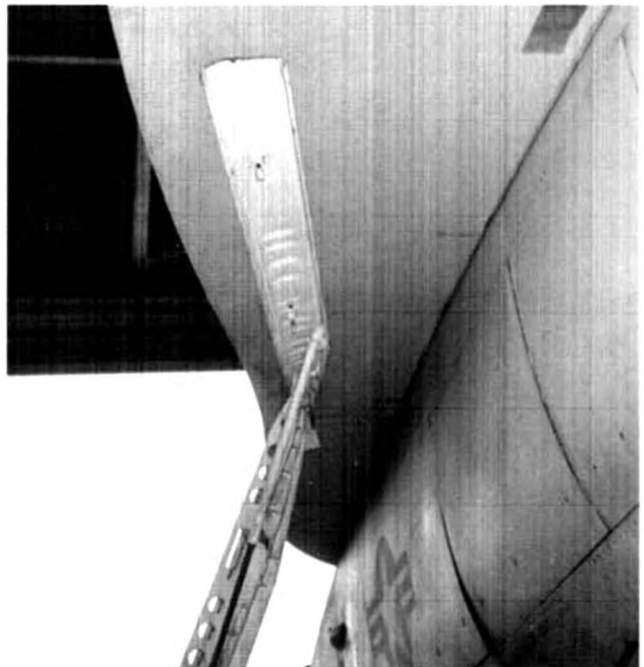
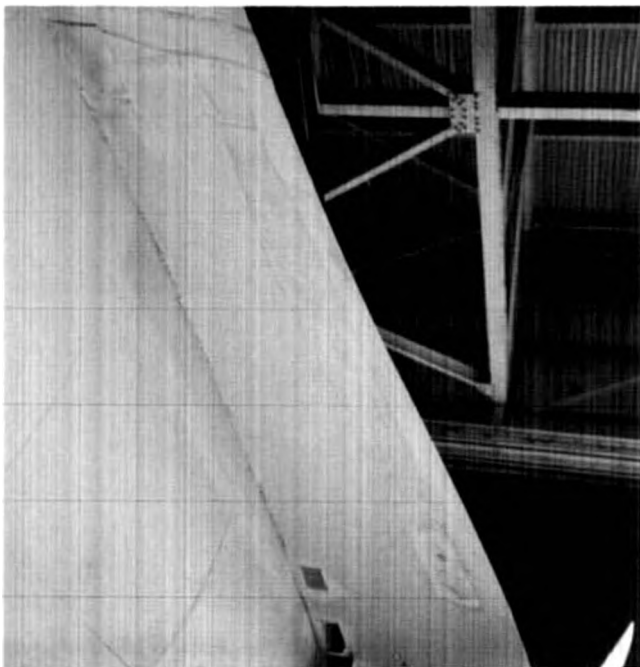
On both the F/A-18C and F/A-18D, there is an additional antenna on the right forward nose gear door and another on the underside of the gun bay door. Both are associated with the cancelled AN/ALQ-165 ASPJ system. The white antenna fairing on the nose gear door is the low band transmitting antenna, while the forward white fairing on the gun bay door (to the right in this photograph) is the high band transmitting antenna. The circle just to the aft of it with the five dots (actually short prongs) is part of the AN/ALR-67 system.



BOARDING LADDER

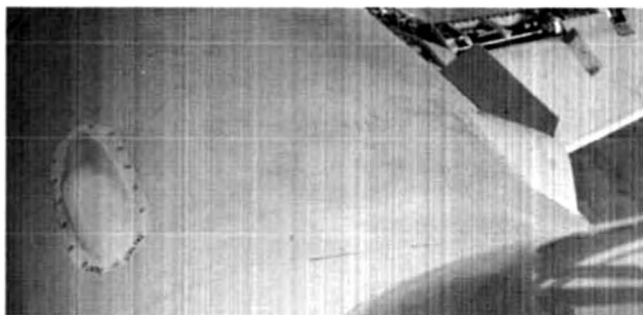


Hornets have a self-contained boarding ladder that folds up into the left leading edge extension or LEX. Note the strut that extends up into the well and the "V"-shaped bracing between the ladder and the fuselage.

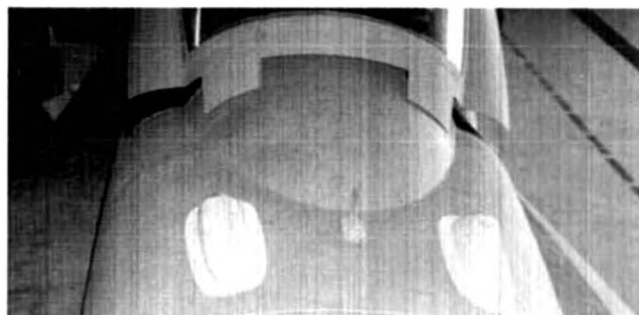


At left is a photograph of the ladder stowed in the LEX. At right is a view of the well into which the ladder collapses when it is stowed. The interior of the well is painted gloss white as is the ladder itself.

TOPSIDE DETAILS



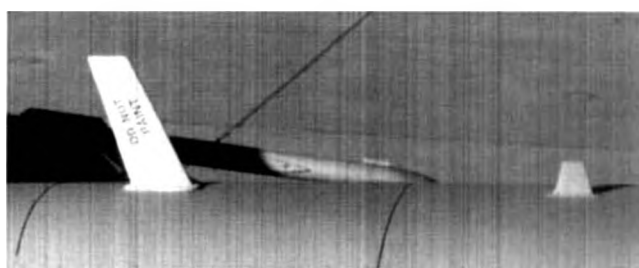
Just aft of the canopy on the spine of F/A-18Cs are two white fairings. These were to be transmitting antennas for the AN/ALQ-165 system which has been cancelled.



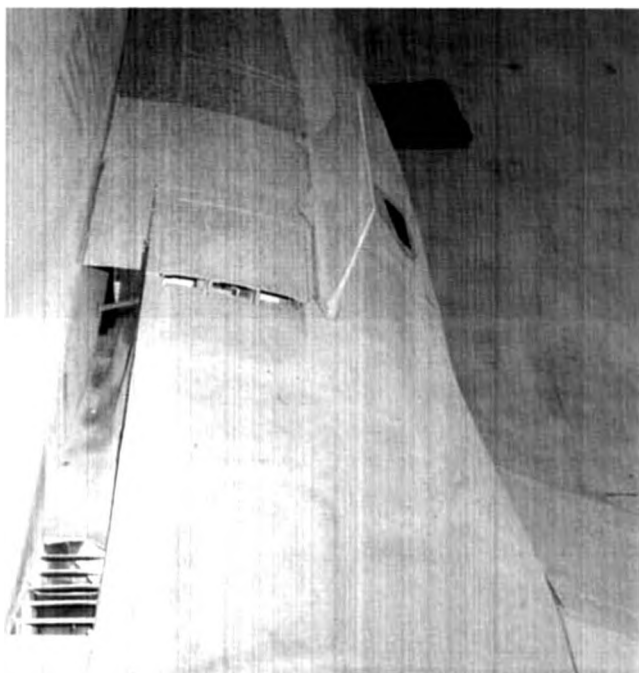
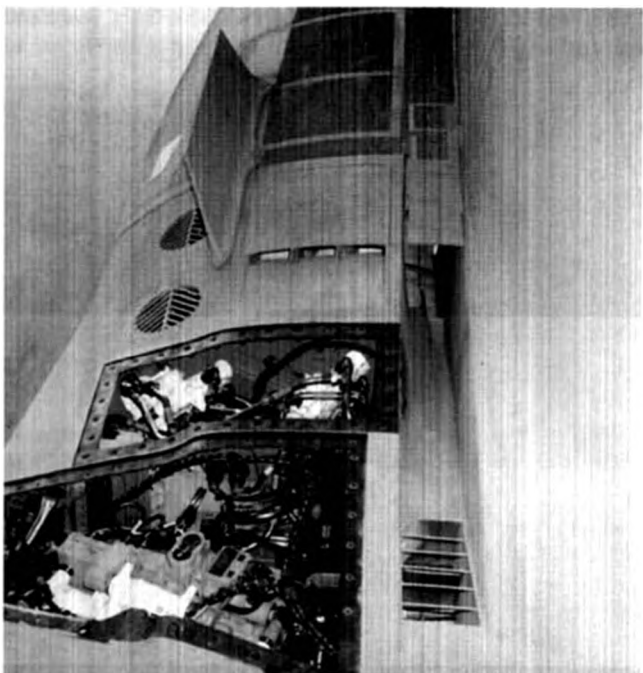
The two AN/ALQ-165 antennas are also on F/A-18Ds. However, they are closer together, and they are further aft on the spine because of the longer canopy.



The small blade antenna to the right is the TACAN aerial, while the larger one to the left is the UHF/IFF data link antenna. Forward is to the right in this photograph.

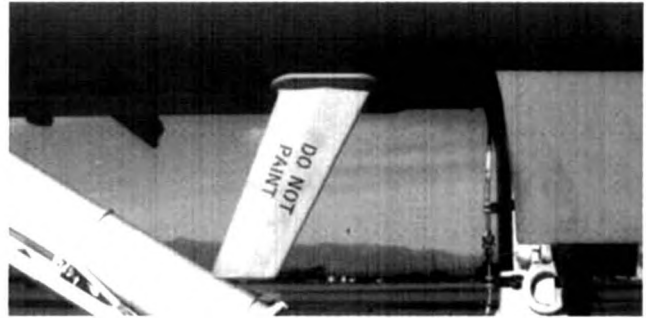
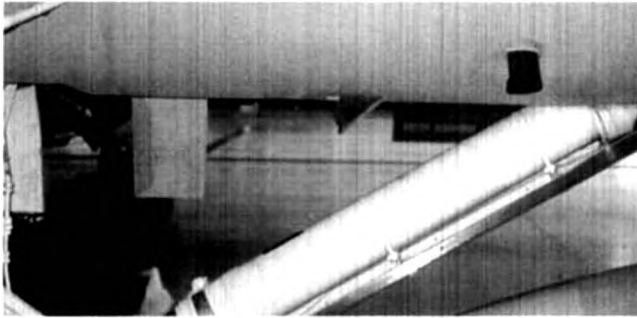


Beginning with Lot 14, F/A-18Cs and Ds have a taller UHF/IFF antenna which is also swept back. The TACAN antenna remains the same as before. (Roth)

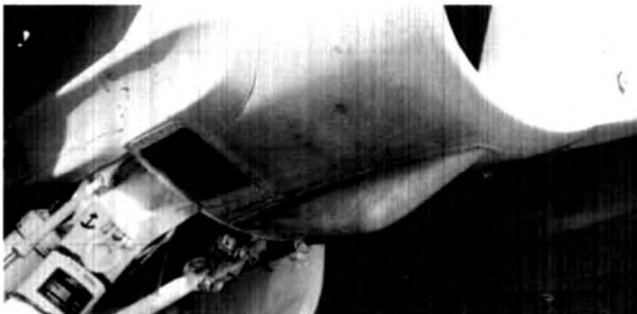


These two photographs show the LEX fences that were added to all aircraft beginning in March 1988. These fences alter the airflow over the vertical tails in order to reduce vibrations that were causing cracks in the airframe. Note that each fence is attached at its forward end and in the center. However there is no attachment at the aft end. Just aft of the center attach point is where the center fuselage section produced by Northrop begins. Northrop wanted too much money to modify their part of the airframe where the aft end of the fence would be attached. Therefore, that attach point was deleted leaving only the forward two. Outboard of the forward end of each LEX fence is a position light. The one on the left LEX is red, while the one on the right is green. The two circular vents in the photograph at left are cooling air spill ducts. Inboard of each LEX fence are inlet ramp bleed air spill ducts, and the large slots next to the fuselage are boundary layer air spill ducts. The louvers at the aft end of each duct are for venting hot air from the air conditioning heat exchangers.

LOWER & AFT FUSELAGE



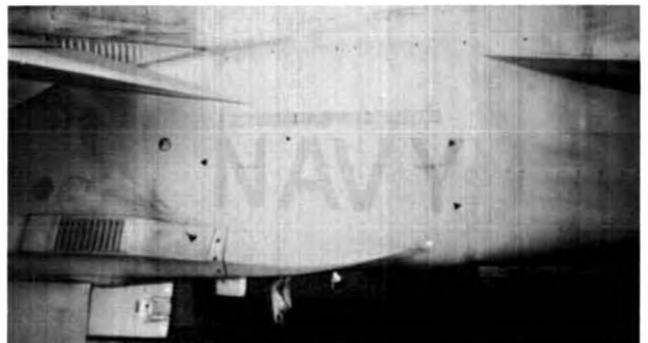
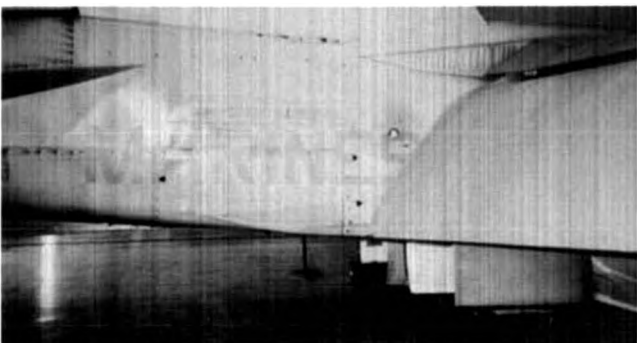
As was the case with the upper UHF/IFF antenna on the spine, the lower UHF/TACAN antenna, located under the forward fuselage near the nose gear, was changed beginning with Lot 14. At left is the original straight blade antenna as viewed from the left side. At right is the new antenna which is longer and swept back. In the photograph at left, the liquid oxygen vent can be seen just aft of the blade antenna, and the dark object is the total temperature probe. (Left author, right Roth)



Ventral AN/ALR-67 antenna fairings were located under the engine inlets on F/A-18As and Bs. The shape, size, and location of the two fairings varied between the left and right side. AN/ALE-39 countermeasures dispensers were also located under the inlets just forward of the main landing gear wells. (Both Rotramel)

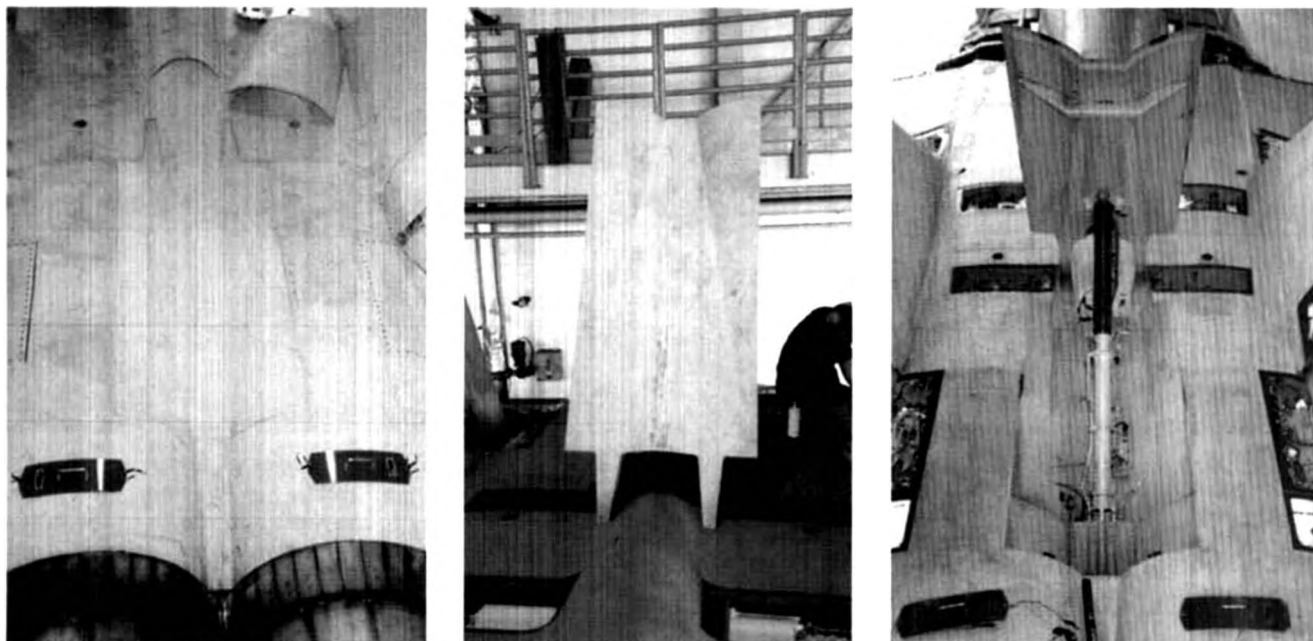


On F/A-18C and D Hornets, the AN/ALR-67 antennas were deleted, but the countermeasures dispensers remained. Modelers should make special note of this, because most F/A-18C and D models incorrectly have the AN/ALR-67 antennas. (Both Rotramel)



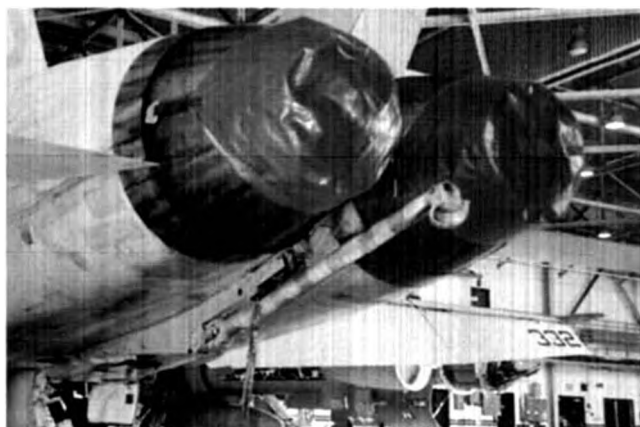
On each side of the aft fuselage section is a three-segment formation light panel. Just forward and slightly below it is a small circle. The one in the photograph at left is at the top of the S in MARINES. This is a gage for the hydraulic reservoir located inside the aircraft at this point. As seen in the photograph at right, there is another reservoir and gage in the corresponding location on the opposite side of the aircraft.

SPEED BRAKE DETAILS

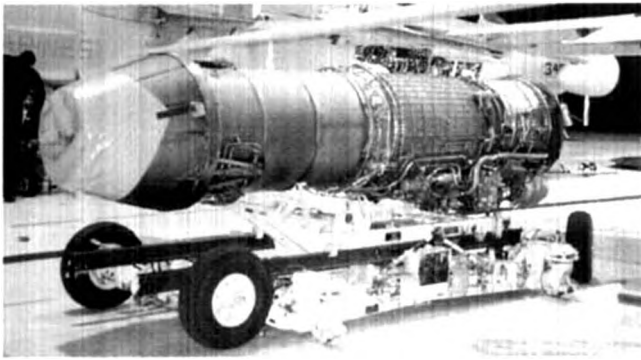


A large speed brake is located on the aft upper fuselage between the engines and vertical tails. The photograph at left was taken from behind and shows the speed brake in the closed position. The center photo shows the brake in the open position from the front, and the photograph at right reveals details of the interior of the speed brake and its well from behind. Both the interior of the speed brake and the well are the same gray as the aircraft.

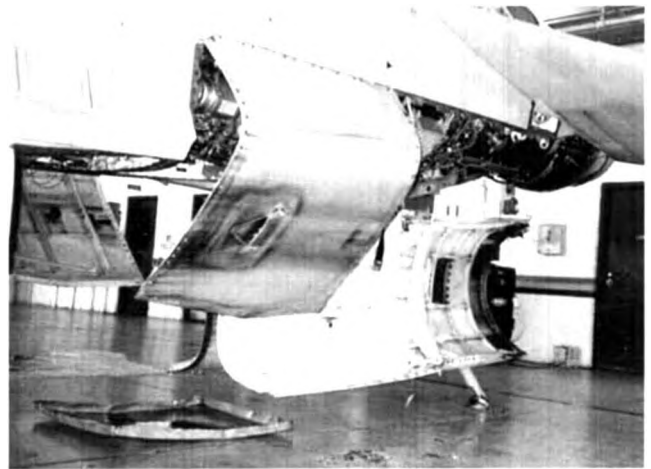
TAIL HOOK DETAILS



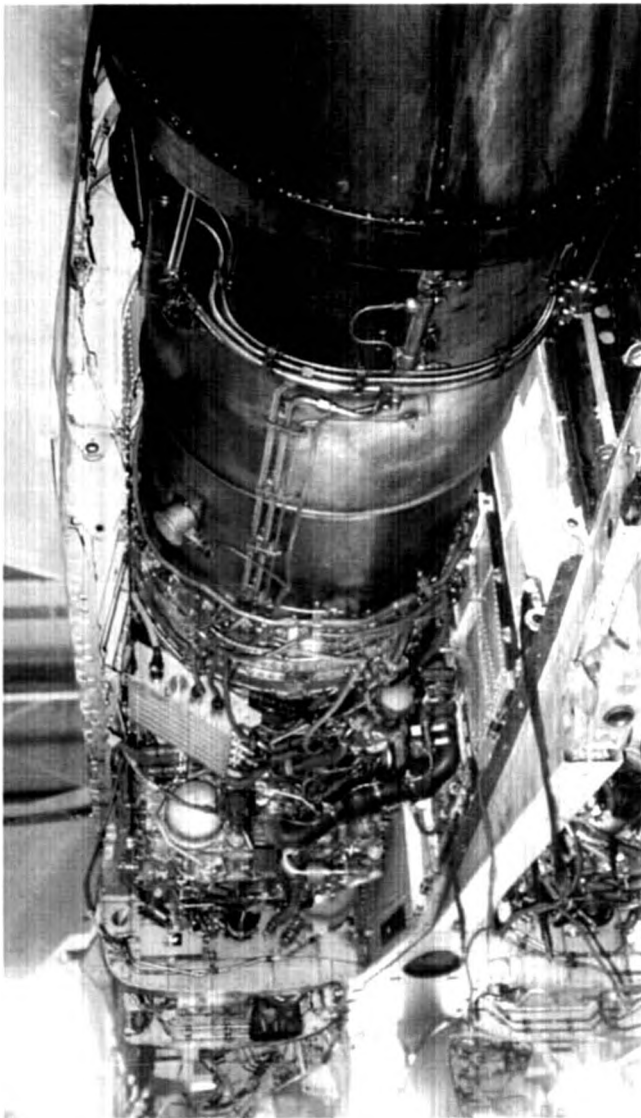
These three photographs show the Hornet's tail hook from different angles. Note that the hook actually extends a few inches further aft than the engine nozzles.



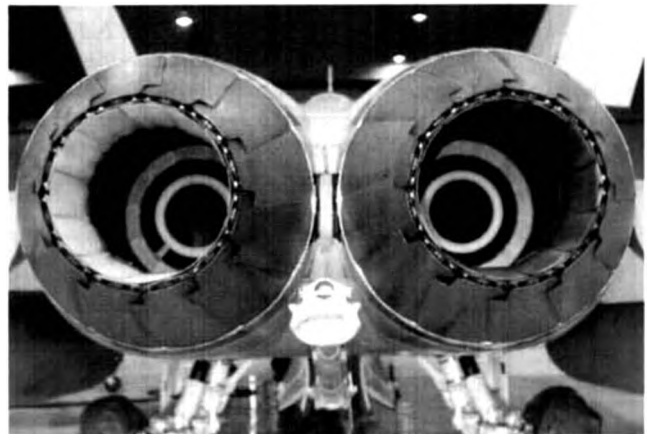
Hornets are powered by two General Electric F404-GE-400 engines which produce 16,000 pounds of thrust each. An enhanced performance engine (EPE) has already been fitted to Kuwait's Hornets, and will soon replace the engines in American aircraft. They will also power Swiss Hornets. The EPE engine, which is designated F404-GE-402, produces 17,600 pounds of thrust.



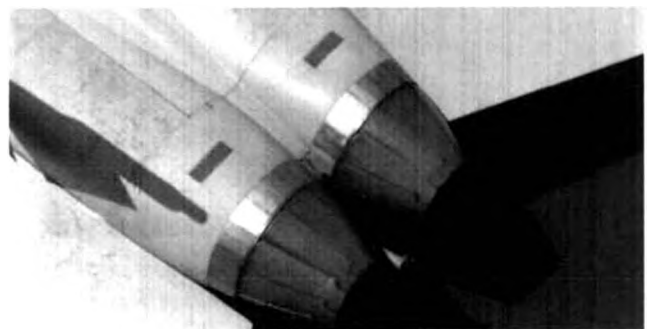
Easy access to the engine bays is provided by hinged doors that can be completely removed from the aircraft as needed. An entire engine change can be accomplished in only thirty minutes. Note the inlet scoop under the door in the foreground. Another scoop is also on the opposite door.



Details of an installed left engine can be seen here. Engines are interchangeable between the left and right bays.

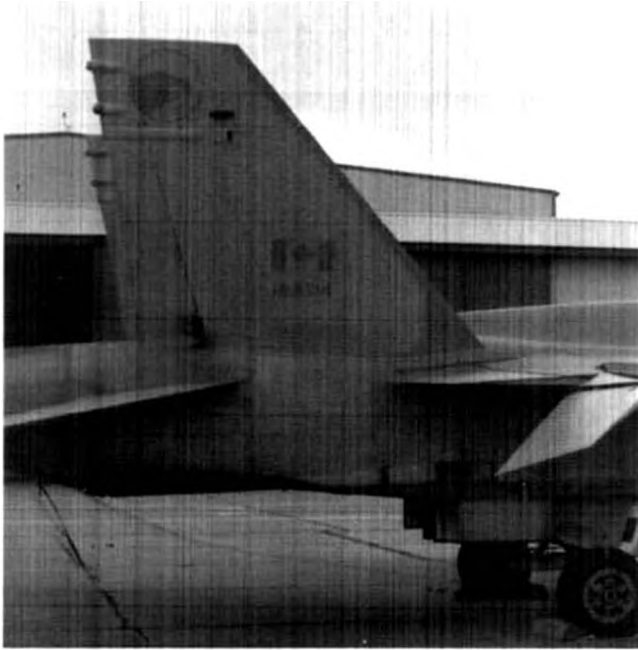


This interesting photograph reveals the interior of the engine nozzles on a test and evaluation Hornet at Patuxent River, Maryland. At left is the new F404-GE-402 enhanced performance engine. The inside of the nozzle is ceramic and is a dirty flat white in color. The right engine is a standard F404-GE-400. The interior of the nozzle is metal and is flat black in color. The flame holder inside each engine is a dirty white. (Rotramel)



The two convergent/divergent nozzles are seen here from above. The aft end of the fuselage is a bright natural metal, while the nozzles are a much darker shade.

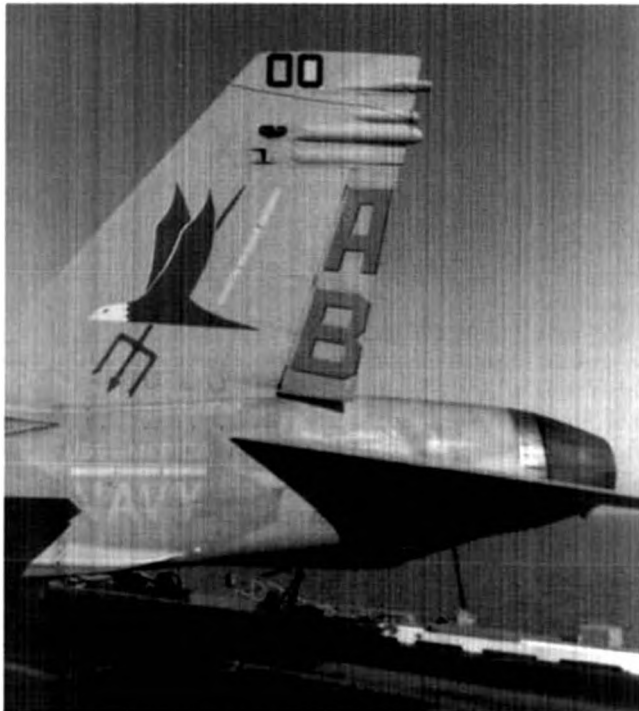
TAIL DETAILS



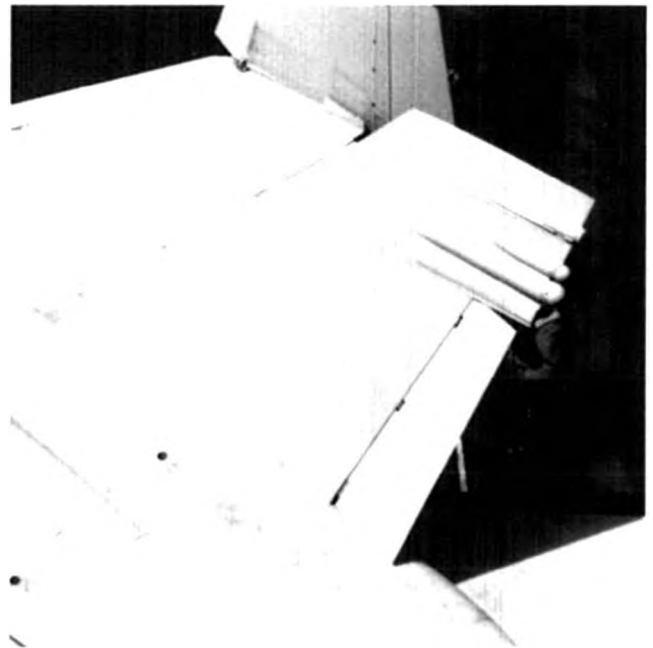
Original production Hornets had vertical tails that look like this. Immediately above the rudder on each tail was a fuel dump nozzle. On the trailing edge above this nozzle were two small fairings. The top fairing on the starboard tail was a position light, while the top fairing on the port tail was an electronic countermeasures transmitter. On both tails, the lower fairing was a radar warning antenna.



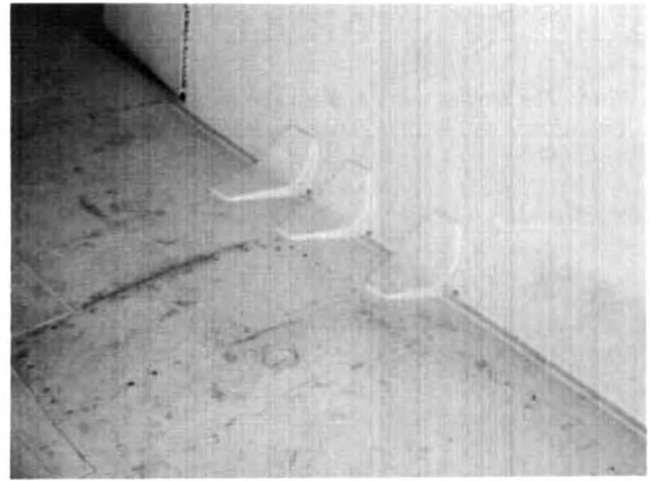
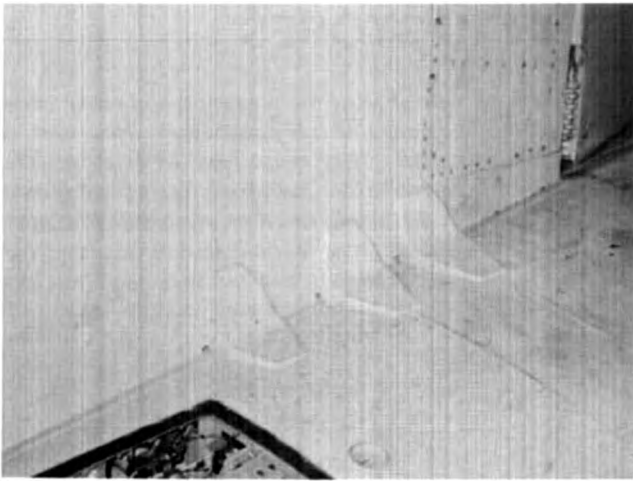
Later, the tails on F/A-18As and F/A-18Bs were modified. The lower fairings were extended forward to the position light, and the top fairings received reinforcing stiffeners. Note the fuel venting air inlet just forward of the fairing for the fuel vent dump and the three-segment formation light panel.



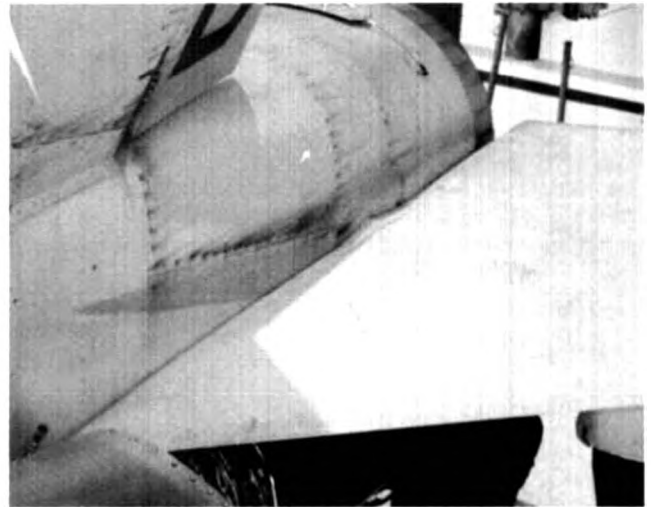
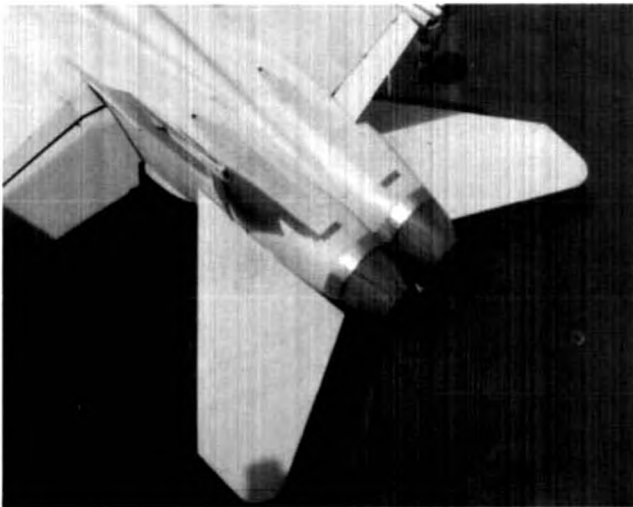
An additional fairing appeared on the tails of F/A-18C and D versions. On the port tail, the top fairing was to be an AN/ALQ-165 high-band transmitting antenna before the program was cancelled. The next fairing down is an AN/ALR-67 receiving antenna, and the large lower fairing was intended to be an AN/ALQ-165 receiver.



At the top of the starboard vertical tail of F/A-18C and -D aircraft is a clear position light. The next fairing down is an AN/ALR-67 tail warning antenna, and the lower fairing was for an AN/ALQ-165 low-band transmitting antenna. The fuel jettison valve remains the same as before.



When fatigue cracks were discovered in the aft fuselage, they were traced to vibrations in the vertical tails. The first "fix" for this problem was the addition of three small braces between the vertical tails and the top of the fuselage. They were located at the root on the inside of each vertical tail as shown in these two photographs.



The horizontal stabilizers are the all-flying type, meaning that the entire surface moves instead of just the aft portion. At left is a high overhead view showing the shape of the stabilizers, while at right is a close-up of the hinge point where the left stabilizer joins the fuselage.



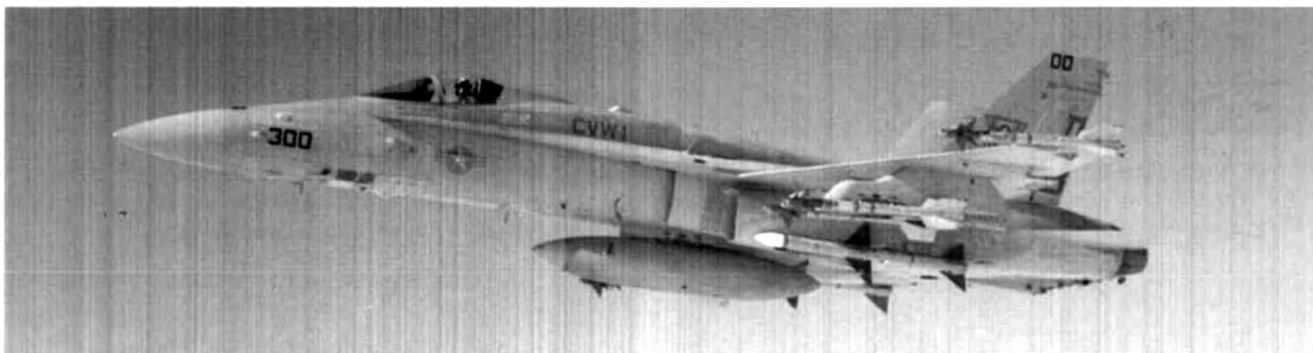
These two photographs show the two horizontal stabilizers from different angles. The stabilizers are attached to the fuselage at a small two-degree anhedral. They work together to provide pitch control and opposite one another to provide roll control in conjunction with the ailerons.

THE HORNET'S STING

ARMAMENT & EXTERNAL STORES

Note: The Hornet can carry a wide variety of external stores. A complete study of all of the weapons and other stores it can carry would take more space than is available here, and it is beyond the scope of this publication. However, on this and the next five pages, a representative sample of these stores is illustrated. They range from air-to-air missiles to smart bombs, and from mines to four types of pods. Included are some never before published Navy photographs of weapons undergoing tests and evaluations. These were released for use in this book less than a week before press time.

AIR-TO-AIR MISSILES

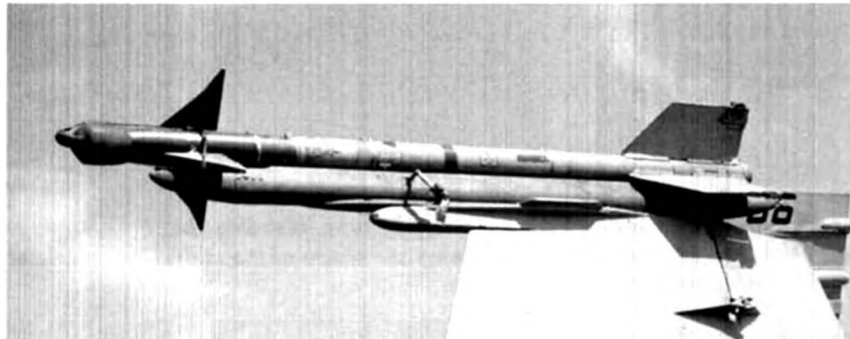


For air-to-air combat, the F/A-18A and B versions can be armed with AIM-9M Sidewinder and AIM-7M Sparrow missiles. F/A-18C and D variants can also employ the AIM-120 AMRAAM. This F/A-18C carries six infrared guided Sidewinders and two radar guided Sparrows. The two Sidewinders on the wing tip launch rails are usually standard regardless of mission, while the two additional Sidewinders on each of the two outboard wing pylons are carried only for air-to-air missions. Single AIM-7 Sparrows can also be loaded on the outboard wing stations using LAU-115 adapters.

(McDonnell Douglas)

This close-up provides details of a live AIM-9M on the launch rail of an F/A-18A. The forward portion of the missile, to include the control fins, is a very dark metallic olive drab color. The rest of the missile is Federal Standard 36375 gray. The rollerons on the outer aft corner of each wing are natural metal. The forward band around the missile's warhead is yellow, and the aft band around the rocket motor is brown.

(Drummond)



Details of the twin LAU-7 launchers and Sidewinder missiles are shown here. The two LAU-7 launchers are attached to an LAU-115 adapter rather than being carried directly to the outboard pylon. Note the close clearance between the missile's wings and the side of the pylon.

(Official U. S. Navy photograph by PHAN Salman)



This photograph is included to illustrate a difference between the FSD Hornets and production aircraft that has not been pointed out elsewhere. This is the left fuselage station on one of the FSD aircraft. Note how the fairing separates the missile from the side of the fuselage, and that the fairing extends forward to the lip of the intake. (Linn)



Compare this photograph with the one above. This is a production aircraft, and the fairing is smaller. It does not extend forward to the intake lip, and the missile is carried closer to the side of the fuselage.



An AIM-7 Sparrow is loaded onto the left fuselage station using muscle power. Note the addition of the "C"-shaped LAU-116 ejectors that will separate the missile from the aircraft when it is fired. (Official U. S. Navy photograph by PHCS Dave Fraker)



Up to ten AIM-120 Advanced Medium Range Air-to-Air Missiles (AMRAAMs) can be carried by F/A-18Cs and F/A-18Ds as shown here. The first deployment of Hornets with AMRAAMs was aboard the USS ABRAHAM LINCOLN, CVN-72, in late 1993.

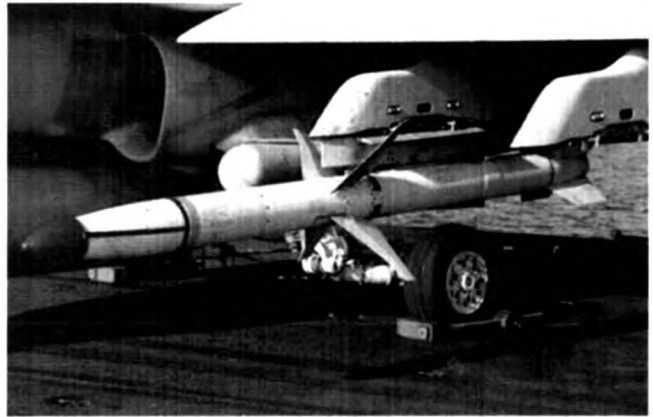
(Official U. S. Navy photograph)

AIR-TO-SURFACE WEAPONS



An AGM-84E Standoff Land Attack Missile (SLAM) is launched from an F/A-18C assigned to the Pacific Missile Test Center (now renamed the Naval Air Warfare Center, Weapons Division). This missile is a derivative of the Harpoon, and it was first used in combat during Operation Desert Storm. Harpoons are also in the Hornet's inventory as seen on the front cover of this book.

(McDonnell Douglas)



The AGM-88 HARM was used successfully by Hornets against Libya, in the Gulf War, and in Operation Southern Watch. Contrary to reports published elsewhere, HARM capability was not added beginning with F/A-18Cs. Even the earliest production Hornets were certified to employ it as seen here on this F/A-18A.

(Drummond)



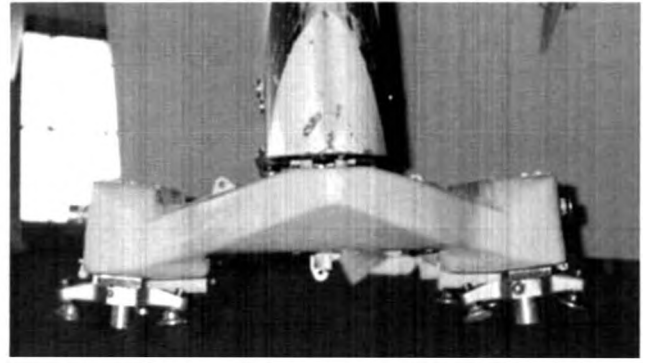
An ER/DL Walleye II electro-optically guided bomb falls away from an F/A-18C. The AWW-13 data link pod, which allows the pilot to control the weapon, can be seen on the aircraft's centerline.

(Official U. S. Navy photograph)

Below: Hornets can deliver several types of laser guided bombs. Here, GBU-24B/B Paveway III LGBs are seen undergoing certification tests.

(Official U. S. Navy photograph)





At left, two Mk 82, 500-pound bombs are attached to each of the wing pylons through the use of a BRU-33 vertical ejector rack (VER). These racks have often erroneously been called horizontal ejector racks, because the weapons are loaded horizontally on them. But the correct official name is vertical ejector rack. It should be noted again that Mk 82, 500-pound bombs are not certified to be employed from Hornets on multiple ejector racks (MER) or triple ejector racks (TER), although these bombss are sometimes loaded on these racks for ground publicity photographs or for open house displays. The only stores certified to be carried on MERs are listed on page 32. The only store certified for carriage by the Hornet on TERs is the ADM-141 Tactical Air-Launched Decoy (TALD). At right is a photograph of the improved BRU-33A canted vertical ejector rack (CVER). This is wider than the earlier VER, thus providing greater horizontal separation for the weapons. The ejectors that push the weapons away from the rack when they are dropped are angled five degrees outward as can be seen in this front view.

(Left Official U. S. Navy photograph, right Rotramel)



Mk 83, 1000-pound bombs are loaded on this F/A-18A. Although they are loaded singly in this case, Mk 83s can also be loaded in pairs on VERs or CVERs. (Drummond)



An F/A-18A drops Mk 77 fire bombs (napalm) during release tests. These weapons may be carried parent-mounted directly on the centerline station and any of the four wing pylons. They may also be loaded on vertical ejector racks, and are certified for shore-based use only.

(Official U. S. Navy photograph)



These F/A-18Cs from VFA-105 carry LAU-10, four-tube rocket pods. These pods cannot be directly mounted to the pylon, but must be carried on VERs or CVERs. They may be carried singly or in pairs on the vertical ejector racks, and can be loaded on any wing pylon. These pods, and their 5-inch rockets, are most often associated with Marine F/A-18D Hornets when operating as fast FACs. LAU-61, 19-tube and LAU-68, 7-tube pods for 2.75-inch rockets may also be employed on VERs which are mounted to the outboard pylons.

(Official U. S. Navy photograph by LCDR L. O. Prince)



Above left and right: Various types of mines are also included in the Hornet's inventory of weapons. The top left photograph shows an F/A-18C with Mk 55 Bottom Mines, while at top right are Mk 65 Quickstrike mines on another Hornet.

(Official U. S. Navy photographs)



Left: A Mk 60 CAPTOR (incapsulated Mk 46 torpedo) moored mine drops away from an F/A-18A during weapons evaluation.

(Official U. S. Navy photograph)



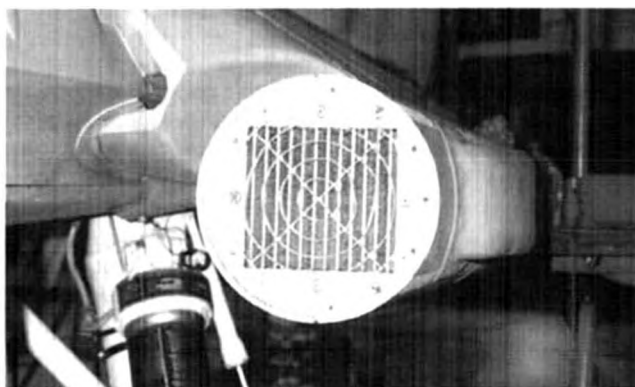
Tomorrow's weapons are also being tested on Hornets. This picture shows the first launch of the new AGM-154 Joint Stand Off Weapon (JSOW) from NF/A-18A, 161925, on 8 March, 1994. It is being developed for use by the Air Force, Navy, and Marines as a stand-off glide weapon and will be used to attack heavily defended targets.

(Official U. S. Navy photograph)

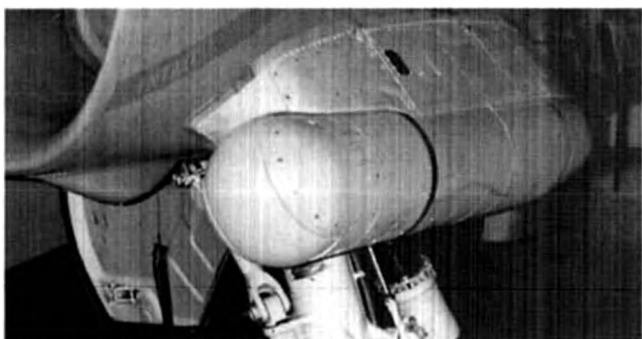
PODS



The ASQ-173 laser spot tracker/strike camera (LST/SCAM), later renamed the laser detector tracker/(strike) camera (LDT/CAM) can be mounted on the Hornet's right fuselage station. It was derived from the Air Force's Pave Penny pod, and senses laser energy reflected from a target designated by ground troops or by another aircraft. Symbology is displayed on the HUD to assist the pilot in acquiring the target. This is a daytime-only system with no laser designation capability. A 35-mm format strike camera is housed in the rear of the ASQ-173 as seen in the photograph at left. This camera aids in bomb damage assessment (BDA). It has a thirty-five degree field of view and is panned 180 degrees along the aircraft's track. (Both Rotramel)



Another pod system that is carried on the right fuselage station is the AAR-50 thermal imaging navigation set (TINS) which was developed by Hughes. It is commonly known as the navigation FLIR and is usually associated with night attack Hornets. It has a fixed forward-looking FLIR which allows the pilot to see at night, but like the ASQ-173, it has no designation capability. After only six months of testing, interim clearance was granted to VMFA (AW)-121 to begin training with the pod in October 1990 in preparation for their participation in the Gulf War. Interim flight clearance for fleet operations was granted in March 1992, with formal clearance coming in October of that year. At left is an overall view of the AAR-50 installed on the right fuselage station, and at right is a rear view of the pod. (Left author, right Rotramel)



Ford's AAS-38 Targeting FLIR is mounted on the left fuselage station, and it is what gives the Hornet its capability to designate targets for laser guided weapons. Only four of these pods were available for use during the Gulf War, and they were used by VMFA (AW)-121. Fleet clearance for the improved AAS-38A on F/A-18Cs and Ds came in January 1993. The laser designator is housed in the nose turret. The AAS-38A is formally called a laser target designator/rangefinder (LTD/R). At right is an AAS-38A installed on a dolly, and at right is another pod on a dolly. (Left Rotramel, right author)

MODELERS SECTION

Note: There have been many model kits of the F/A-18 released since Detail & Scale's first book on the Hornet was published in 1982. Some of these kits are updates to previous kits of the Hornet FSD aircraft that were covered in the modelers section of that book. Quite a few of the kits available today have been released several times by the same manufacturer, and in a couple of cases, the same kit has been released under more than one label.

We are taking two steps to save valuable space in this modelers section. First, there are no reviews of any kits of the FSD aircraft, because most of these were included in Part 1. Kits of FSD Hornets by Airfix/MPC and Idea/Hobby Craft were released in 1/72nd scale after Part 1 was published. Both of these are of relatively poor quality, and neither is a kit that would now be considered by a serious modeler. Second, and more importantly, all issues of a given kit are being covered in a single review. However, any differences between issues will be discussed.

This modelers section is based on kits available as of April 1994.

1/300th SCALE KIT

Nichimo F/A-18A, Kit Number 21

Except for the tiny models that come in various kits of aircraft carriers, the smallest model presently available of the Hornet is Nichimo's 1/300th scale F/A-18A. It is packaged as a double kit with an S-3A. This Hornet model comes with an instrumentation boom that should be removed. Otherwise, it fairly accurately represents a production F/A-18A. The canopy is molded in gray plastic along with the rest of the fuselage, and it is supposed to be painted silver, black, or pale blue to represent glass. Sidewinders are molded integral with the wings, and two Sparrows are included for the fuselage stations. There are no pylons or external stores to go on them.

Because of the small size of this model, which limits the amount of detailing, it may not be attractive to the serious modeler. However, Nichimo has released a nice series of these tiny models, and displayed together, they would make an interesting collection. The kit is now considered a collector's item and is valued between four and six dollars.

1/144th SCALE KITS

DML F/A-18 A, C, and D Hornets, Various Kit Numbers

Originally released in 1989 with Blue Angels markings for an F/A-18A, this kit has been released numerous times

of different Hornet variants. For the most part, changes between the kits were limited to box art, external stores, and decals.

The basic model itself is fairly accurate, although the finished model looks a little stubby in appearance. The canopies, in both the single and two-seat models, are slightly too large. The fit of the canopy to the fuselage is not good, and this is rather difficult to correct.

The cockpit consists of only a single piece that includes the floor, a seat, and a pilot figure that looks more like a droid from "Star Wars" than a human being. We recommend discarding this piece and using plastic card to add a floor, consoles, and instrument panel. A control column can be made from sprue, and Commander Series Models has nice resin seats in 1/144th scale. This small amount of cockpit detailing will not take much time, but it will considerably improve the appearance of the model.

When LEX fences were added to real Hornets, DML added these to their kits. However, they are too thick and are out of scale. We suggest making the fences out of very thin plastic card stock instead. Likewise, the landing gear doors are too thick and should be replaced with new ones cut from thin plastic card stock.

Otherwise, the DML kits are quite good, and nice little models can be built from them. External stores, pylons, and decals vary as covered below.

Kit number 4503 was released first with Blue Angels' markings, and kit 4003 followed the same year. It featured a segment of carrier deck and a raised jet blast deflector, allowing the modeler to build a small diorama. Also included was a tow tractor, tow bar, and six flight deck personnel. A centerline pylon with an integral fuel tank was provided as were four wing pylons. Two of the wing pylons had launch rails on them and two did not, but no stores were included for any of them. In fact, the instruction sheet did not even make any reference to the wing pylons. Sidewinder missiles were provided for the wing tips, and there are also two Sparrows. But again, the Sparrows are not mentioned on the instruction sheet. For the two fuselage stations, a LST/SCAM was included, but the instructions showed it backwards. The larger end should go toward the rear. An AAS-38 targeting FLIR was provided for the other fuselage station, but it was another part that was not identified on the instructions. Markings were for an F/A-18A from VFA-151.

In 1990, DML released kit 4513. This was another F/A-18A with colorful CAG markings for VFA-113. Pylons and stores were the same as in kit 4503. Kit 4522 followed in 1991 and represented a CF-18A. The decals provided markings for a Canadian Hornet from 410 Squad-

DML has released both single and two-seat Hornet models. These are fairly nice as 1/144th scale fighters go, but neither of the canopies are quite correct in shape or size. They come with pylons and differing ordnance loads which also may be supplemented with stores from the LS weapons sets.



ron. Four Mk 20 Rockeye cluster bombs, two vertical ejector racks, and two rocket pods were included. Also in 1991, kit 4006 was released. Entitled "Libyan Raiders," it included both an F/A-18A and an A-6E. The markings for the Hornet were those of VFA-131. The only weapons provided for the F/A-18A were the Sidewinder and Sparrow missiles. The LST/SCAM and AAS-38 were also included.

Another release during 1991 was kit number 4010, and it was also a double kit featuring a Hornet and an AV-8B Harrier. Markings were for an F/A-18A from VMFA-531. External stores were the same as in kit 4522.

Kit 4536 also shows a copyright of 1991 and was of an F/A-18D from VFA-106. However, the 300 modex on the aircraft belongs to an F/A-18B that has similar markings. If you look at the BuNo. on the decal sheet through a magnifying glass, it is correct for the F/A-18D, but has F/A-18A stencilled above it. Weapons in this kit include cluster bombs and two Harpoon anti-ship missiles. The only changes DML made to make this an F/A-18D was to include the necessary two cockpits and larger canopy, and to provide the two small antenna fairings that go on the spine of the aircraft. None of the other additional antennas were added, nor were the vertical tails updated to the correct F/A-18D configuration.

The first issue of an F/A-18C came in 1993 with kit 4562. It featured colorful CAG markings for VFA-25 on the decal sheet, and new weapons were included. Both SUU-20 Rockeye and SUU-30 cluster bomb units (the latter of which is not in the Navy/Marine inventory) were provided as were four GBU-12 Paveway II laser guided bombs. Again, the only update DML made to make this an F/A-18C was to provide the two small antenna fairings that go on the spine of the aircraft. None of the other necessary changes were included.

LS F/A-18A Hornets, Various Kit Numbers

Released originally in 1983 as a FSD Hornet in kit number A123, LS updated this model to production standards by filling in the LEX slots and removing the snags from the wings and horizontal stabilators. With only these changes, the kit has been released many times by LS and other companies as well.

The first issue of a production Hornet was in kit 1030 which was released in 1985. The sleek lines of the Hornet were better represented in this kit than in the DML issues. The canopy looks more like the real thing, and it fits nicely on the fuselage. There are no pylons or stores in any of the issues except for the standard Sidewinder and Sparrow missiles. There is no cockpit, but this can be easily and quickly added by the modeler using card stock, sprue, and seats from Commander Series Models. The engine inlets will require some reworking, but otherwise the molding and fit are quite good. We believe that the best Hornet model in 1/144th scale can be built using this kit with pylons and weapons from the DML kits. Additional weapons can be obtained from the LS weapons sets. Updates for the different Hornet variants can also easily be added from scratch.

Kit 1030 had a decal sheet for VMFA-314 with various numbers so that the modeler could choose any modex he desired. Kit 1040, released in 1989, had mark-



The original LS kit in 1/144th scale represented an FSD Hornet, but it has been upgraded to an early production F/A-18A as shown here. Its outline is better than the DML kits, but it does not come with pylons or weapons to go on them. This kit has been released numerous times under several labels.

ings for a Canadian Hornet from 410 Squadron. We did not like either of the options, so we used Blue Angel markings from a DML kit on our review sample.

ACE released the same model in 1985 as kit number 1004. However, the plastic was still for the prototype Hornet. The LS FSD model was again issued in 1988 by Revell as kit 4062. Markings for a Marine aircraft were provided, but no specific unit was represented. AMT/ERTL released it again in 1990 as a production F/A-18A with the same markings as the LS kit number 1030 covered above. This was followed by Hobby Craft's kits HC 1003 and HC 1124. Both of these models represented FSD Hornets, although each featured markings for VFA-136, VMFA-122, and Canada's 409 Squadron.

Matchbox also issued this kit as number 40058, and furnished Australian markings. However, the plastic represented an FSD Hornet. Revell of Germany's release as kit number 4075 was likewise a prototype. Aii kit number 23007 was the production version, and it had the same decals found in LS kit number 1003.

1/72nd SCALE KITS

AMT/ERTL F/A-18A, Kit Numbers 8703

Over sixty parts molded in light gray plastic and a clear canopy comprise this kit. A considerable amount of flash was on most of the parts, and in some cases parts were poorly formed. This often resulted in fit problems, especially around the forward fuselage halves, wheels and the two-piece canopy.

Panel lines are both raised and recessed, and they are



The AMT/ERTL 1/72nd scale model was used by J. Frank Locklear to build this Hornet. The kit represents an F/A-18A, however the decals that come with it are for an F/A-18C from VFA-81.

rather sparse. There is little in the way of cockpit detailing, and only two Sparrows and two Sidewinders are provided for armament.

The decals were out of register, and were for an F/A-18C MiG killer from the Gulf War. However, the kit is of an F/A-18A. In short, far better 1/72nd scale Hornet kits are available that would be better suited for the serious scale modeler. This model has also been released as ESCI/ERTL kit number 9117.

Review by J. Frank Locklear

Hasegawa 1/72nd Scale Hornets, Various Kit Numbers

The original Hasegawa 1/72nd scale kit was number E18 which was also released in the United States by Minicraft as kit number 1154. It was an excellent model of an FSD Hornet. Hasegawa has since released a series of 1/72nd scale production Hornets that are the best kits to use in this scale. However, they are not without some problems.

These kits feature accurate detailing and a correct outline and shape. The fine panel lines are of the preferred recessed variety. The cockpit is rather basic, and detailing is provided by decals on the instrument panel and consoles. This is quite sufficient in 1/72nd scale for most modelers, except that a pair of throttles should be added to the left console. This may prove a little difficult, because the side consoles are too thin. The ejection seats are in two halves, and the resulting seam down the middle is not easy to get rid of. No representation of the seat belts or harness is included. We enhanced the appearance of our models by using Verlinden's seats.

There is detailing in the wheel wells, but the wells for the main gear are not deep enough. The same is true for the forward portion of the nose gear well. Otherwise, the landing gear is nicely done. A boarding ladder is provided, but only a locator hole is provided in the LEX. If the ladder is in the extended position, the well into which it folds should be open, and it is not. Opening it would mean reworking the entire left LEX. The simple solution is to discard the ladder and fill the locator hole.

Fit is generally good throughout, and all of the antenna fairings are included as appropriate for the different variants. However, the two noticeable pitot heads on each side of the nose are missing from all of these kits. Most modelers will want to take the time to add these probes from scratch.

External stores include two Sidewinder and two Sparrow missiles, three fuel tanks, a LST/SCAM pod and a targeting FLIR. An adapter is provided for the LST/SCAM, but there is no adapter for the targeting FLIR.

The best Hornet kits in 1/72nd scale are from Hasegawa, and all production variants can be built from the various issues. At left is an F/A-18A in the markings of the Blue Angels. An F/A-18C is in the middle, and an F/A-18D is at right. Hasegawa also has a TF/A-18A kit which can be used to build an F/A-18B.

This is very noticeable on the real thing, so it is best not to use this pod. Some modelers may want to try to build the adapter from scratch. Two VERs are included, but no other stores come with the kits. The instructions refer the modeler to the various Hasegawa weapons sets to obtain additional ordnance. Neither of the F/A-18A kits have LEX fences, because they were released before these devices were added to the real Hornets.

Kit 810 is of an F/A-18A, and markings are provided for VFA-113, VMFA-531, and Canada's 410 Squadron. Blue Angels' markings are included in kit 02812, however the markings are gold instead of the proper bright yellow.

Hasegawa released kit 811 as a TF-18A which has since been redesignated the F/A-18B. This is exactly the same as the F/A-18A kits except that additional parts are provided for the second cockpit and the appropriate two-place canopy replaces the single-seat variety. Markings are provided for Hornets from VFA-125, Canada's 410 Squadron, and number A21-101 in Australian markings. This issue also does not have the LEX fences.

Two 1/72nd scale F/A-18C kits have been issued by Hasegawa. Both have the necessary additions in the form of antenna fairings and new vertical tails. But be careful to use the correct tails, because the original F/A-18A vertical tails remain in the kits. LEX fences are provided, but the three braces for the vertical tails are not. Otherwise, these kits are the same as the F/A-18A models. They retain the antenna fairings under the engine inlets, and these should be removed. The instructions do not explain this, but these antennas are not on F/A-18Cs. Kit ET1 has markings for Hornets from VFA-82 and VMFA-232. The decals in kit SP69 provide markings for VFA-192 and VFA-195.

An F/A-18D is the subject of kit ET2. Although the box claims that it is a night attack Hornet, the rear cockpit has the standard configuration. All of the necessary updates included in the F/A-18C kit are again provided here, as are the additional parts for the second cockpit and the two-seat canopy. LEX fences are also included, but the braces for the vertical tails are not. Again, be sure to remove the antenna fairings from engine inlets, because they are not on F/A-18Ds. Decals are provided for aircraft from VMFA (AW)-121 and VFA-106. However the modex has again been confused with the F/A-18B. It should be 000, not 300.

Revell of Germany CF-18, Kit Number 4362

This is a re-release of the Testors/Italeri kit covered below. Comments made for that kit apply to this one as well. Elaborate decals for a Canadian CF-18A from 439 Squadron are provided. These were painted on the air-



craft for "Tigermeet 1991."

Testors/Italeri Kit Numbers 284 and 662

These kits are rated second only to the Hasegawa kits in 1/72nd scale, and in some respects they are better. They are updated versions of the original Testors/Italeri kit number 681, which represents the FSD aircraft.

Kit 284 is packaged in a red box with the "Supercarrier" logo as a tie-in with the short-lived TV series about a fictitious Navy carrier. It correctly represents a production F/A-18A or B, except that the cannon port and gun gas vents are not represented on the nose section. But, it does have the pitot heads that are missing from the Hasegawa kits. The cockpits are also better than those in the Hasegawa kits. Details are raised on the instrument panels and consoles, but they are inaccurate. However, the decals provided are accurate, so sand off the raised details and use the decals. The one exception is the instrument panel in the rear cockpit. It is incorrect in shape, being pointed at the top. So this must be corrected if a model of a two-seat Hornet is to be built.

Fit is generally good, and only a little filling and sanding is necessary. The underside of the leading edge extensions needs filling and sanding as does the area around the intakes. Also, the upper fuselage around the cockpit is a separate piece, and some filling is needed here also. The outline is not quite accurate. The wing span scales out to 38.58 feet, when it should be 37.4 feet. In length it is a little short. It scales out to 55.26 feet, while the real thing is an even 56 feet.

There are several major shortcomings to this kit. First, all panel lines are the raised variety, and this even includes the control surfaces. Raised lines to represent the control surfaces will undoubtedly cause some modelers to eliminate this kit from consideration. The formation light panels at the wing tips are also omitted.

Stores include Sidewinder missiles for the wing tips, two fuel tanks, a LST/SCAM and a targeting FLIR, both with adapters, four Mk 82, 500-pound bombs with VERs to place them on, and two HARM missiles. Decals are provided for an F/A-18A from VFA-15, and for a two-seat Australian Hornet.

Kit 662 is advertised as an F/A-18D "Night Attack" Hornet, however it falls short. The additional antenna fairings are provided for the spine, but not for the nose section above the formation light panel or just forward of the national insignia. The rear cockpit is the standard configuration with the same inaccuracy as kit 284 above.



Ed Sveum built this F/A-18A using an early Testors/Italeri 1/72nd scale kit. In this scale, the latest issues of the Testors kit have been updated and are rated second only to the Hasegawa kits in quality.

The vertical tails are correct for an F/A-18D, however the formation light panels at the wing tips, the cannon port, and gun gas purge intakes are missing. The vents on either side of the nose have also been omitted. On the plus side, LEX fences have been added to this issue.

Armament is the same as for kit 284, except that the Mk 82s and VERs have been replaced with two Harpoon anti-ship missiles. Decals are for an F/A-18D from VMFA (AW)-225 and a Canadian Hornet from 410 Squadron.

Although we rate this kit as second only to the Hasegawa kits, it falls short, and we believe that most modelers will want to pay the difference in price for the better Hasegawa models.

Ed Sveum contributed to this review.

1/48th SCALE KITS

ESCI/ERTL F/A-18A, Kit Number 4072

ERTL has released some very good kits over the years, but this Hornet model is not one of their better offerings. It is poorly molded, lacks detail, and has numerous inaccuracies. Important features have been left off, and the weapons are incorrect for any Hornet variant. The best part of this model is the decal sheet which features markings for VFA-25, Canada's 410 Squadron, as well as one Spanish and one Australian Hornet. But here again there are problems. No tail codes are included for the aircraft from VFA-25. Simply stated, this kit is not one that can be considered by the serious scale modeler.

Hasegawa F/A-18 Hornets, Various Kit Numbers

Without question, these are the best Hornet kits available in any scale. Their one major drawback is a very high price that usually runs about \$75.00 retail. While we would expect to pay more for these excellent kits than for other 1/48th scale Hornets, this price seems to be unreasonably high.

Kit P24 is of a Navy F/A-18A and has markings for VFA-15. A Marine F/A-18A is in kit P25 which has markings for VMFA-312, VMFA-333, and VMFA-531. P26 is an F/A-18C, and CAG markings are included for VFA-25, VFA-82, and VFA-113. Marine Squadron VMFA-232 is also represented on the decal sheet. Kit Pt3 is of an F/A-18D Hornet, and the box art claims that it is a night attack aircraft. However, the night attack configuration for the rear cockpit is not provided. Decals in this kit include markings for VFA-106, VMFA (AW)-121, and VMFA (AW)-242. Another issue that has been advertised is kit number SP98 which sells for \$89.95 and has Canadian markings, but we have been unable to obtain one in the United States. Reportedly, there was also a "Dambusters" release with markings for VFA-195, but we have been unable to locate one.

Although the majority of each kit is conventional plastic, the main assemblies of the landing gear struts are cast metal. Smaller detailing parts for these struts are plastic. There is also a photoetched metal sheet containing the boarding ladder, plumbing for inside the nose gear, countermeasures dispensers, a mount for the HUD, mirrors, and parts for the instrument panel. All scribing is excellent and is recessed rather than raised.



Hasegawa's series of Hornet kits in 1/48th scale are clearly the best F/A-18 models available. However, their very high price tags places them out of the reach of many modelers. This is the box art for kit P26.

The cockpit interior is very nice with raised details. The HUD even has the correct two pieces of glass. The four-piece ejection seat is acceptable, but could be better. Seat belts are molded onto the survival pack, but there is no representation of the harness. Additional detailing is needed here, or Verlinden's seat can be substituted for the one in the kit.

Fit is good, but the assembly of the fuselage requires extra care. Dry fit all fuselage parts first. Then when you are ready to glue them together, use small amounts of liquid cement to tack them together at different points while assuring proper alignment. Once this is done, go back and add glue along the joints using capillary action.

One of the nicest features of these kits is that the leading and trailing edge flaps on the wings are designed to be shown in the lowered position as they would appear when the aircraft is sitting on the ground.

All of the required updates for the F/A-18C and D kits are included. However, the antenna fairings on the undersides of the inlets are still present, and these should be removed on these variants. Hasegawa also added the LEX fences and the three small braces for the base of each vertical tail.

In the external stores department, Hasegawa provides only three 330-gallon fuel tanks, a LST/SCAM pod, a navigation FLIR, and a targeting FLIR. A pair of VERs are included for the wing pylons, but there are no weapons in the kit. Not even the Sidewinders for the wing tips or the Sparrows for the fuselage stations are provided. Considering the very high price of these kits, it would seem appropriate that some weapons would be included. However, Hasegawa directs the modeler to obtain the stores from its weapons sets, meaning that even more money must be spent.

In short, these kits are high quality throughout. The question concerns the value for the money spent, and this is something each modeler will have to decide.

Monogram F/A-18A Hornets, Various Kit Numbers

The first Monogram Hornet released in 1/48th scale was kit 5802. This represented the first FSD aircraft with its blue and gold trim, and it was the best model of that aircraft in 1/48th scale. Monogram subsequently updated

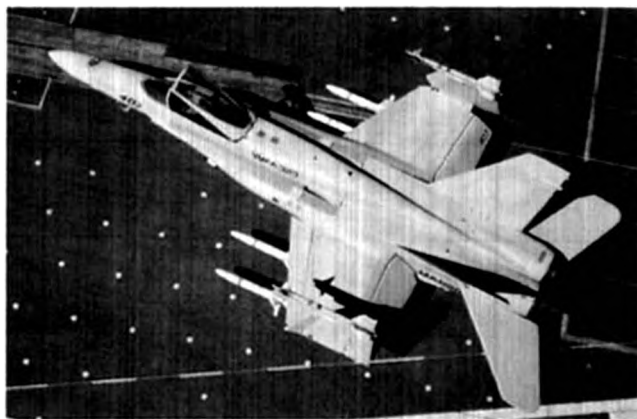
this kit and reissued it as kit number 5807 which they called an A-18 Strike Fighter. Markings were provided for an aircraft from VFA-125. Four GBU-12A Paveway II laser guided bombs were included in this kit, but since the Hornet does not carry this version of the GBU-12, these should not be used on the model. Monogram also released kit number 5833, which was a "high-tech" version of kit number 5807. It included photoetched metal parts to detail the canopy, HUD, and ejection seat. A boarding ladder was also among the photoetched parts. Decals in this kit were for VFA-151. The last issue was kit 5820, which provided markings for a Blue Angels' aircraft. All weapons except the Sidewinders were deleted.

One major problem with the Monogram kits is that the vertical tails are too short. They also have positions for formation light panels scribed on their inside faces. These panels only go on the outside of the tails. The fairings at the top of the vertical tails represent a very early production aircraft. In fact, the entire model is of an early F/A-18A. No LEX fences and no braces for the vertical tails are provided. Likewise, no issue has any updates for the F/A-18C or D variants.

Yellow Hammer has two accessory kits that will help. One provides the braces for the tail and the LEX fences. The other allows the modeler to display the leading and trailing edge flaps in the lowered position which they would be in when the aircraft was on the ground. It should be noted that Monogram's ailerons are also incorrect. They are not the full span notched ailerons used on production aircraft, but these can be easily corrected.

The Blue Angel release has the hardware for mounting AIM-7s to the fuselage stations, however, this is the arrangement used on the FSD aircraft. A simple correction that will suit most modelers is to remove twelve scale inches from the front of these pieces and sand down the remaining leading edge so that it is smoothly faired into the fuselage. Kits 5807 and 5883 eliminate the AIM-7 option, limiting the modeler to the FLIR pods instead.

The only underwing stores that come in any of the



Jim Rotramel spent a lot of time updating and correcting the Monogram 1/48th scale kit while building this model of an F/A-18A from VMFA-323. He armed his model with HARM missiles from Cutting Edge, and used the Yellow Hammer flap kit to display the leading and trailing edge flaps in the lowered position. Jim photographed his model on a simulated carrier deck, which almost makes it look like the real thing!

(Rotramel)

Monogram kits are the GBU-12A LGBs mentioned earlier. There are also no VERs provided either, so this limits the weapons choice. The easiest solution is to use Mk 83 or Mk 84 bombs from other kits or weapons sets, and mount them directly to the pylon. Jim Rotramel used HARM missiles from Cutting Edge on the model pictured with this review. These missiles (kit number CEC4827) are new and come complete with the appropriate LAU-118 launchers. The nice feature about these HARMs, as opposed to others in 1/48th scale, is that they are accurate, including the shape of the radome. The bodies are cast resin, and the fins are cast white metal. Anyone interested in these missiles should contact Cutting Edge at P. O. Box 3956, Merrifield, Virginia 22116.

Assembly of the Monogram kits requires some filling and sanding, because the fit is not always very good. The biggest problem comes when mating the top and bottom fuselage halves together. Take a lot of care when lining the parts up for gluing, but even then, be prepared to fill and sand. The same is true under the wings.

On the plus side, the cockpit detailing, to include ejection seat, consoles, instrument panel, and control column are very nice. But watch out for the tail hook. It is upside down! Simply cut off the hook end and rotate it 180 degrees.

Although there are some other minor problems, this is not a bad kit. It only costs about \$12.00, and its only competition is over \$70.00. Hopefully, Monogram will make some corrections and updates to these molds, or perhaps start over with a new 1/48th scale Hornet kit that can be released as all F/A-18 variants at a reasonable price. It would be a popular model. Right now, the only choices available to the serious scale modeler in 1/48th scale are to spend a lot of money and build a Hasegawa kit, or pay a reasonable price and spend a lot of time and effort making updates and corrections to a Monogram kit. But if the effort is made, a very nice model can result.

Jim Rotramel and Ray Wheeler contributed to this review.

Revell F/A-18A Hornets, Various Kit Numbers

Originally released as an FSD Hornet in kit 4505, Revell's 1/48th scale F/A-18 has been reissued four times as an early production aircraft. Kit 4530 was billed as an F/A-18 "with stores" and featured markings for an aircraft from VMFA-531. Kit 4561 was in the Yeager "Super Fighters" series, and it had markings for an F/A-18A in an unusual half black and half white scheme. The aircraft was named **D'Skunk**, and white plastic was used in this release. Kit 4469 came with Blue Angels markings and was molded in blue plastic. The particular model built for this review was from kit number 4704. This was one of Revell's "Hunt for Red October" series of models. Decals included in this kit were for VFA-113, and they were used on the review sample. This kit, as well as number 4530 was molded in light gray plastic. Some flash is present, but this is to be expected when molds have received this much use. Panel lines and seams are represented by raised scribing.

The cockpit area is all one-piece consisting of the instrument panel, side consoles, and rear bulkhead. Details are supplied in the form of decals, and this is not



Revell's 1/48th scale Hornet was used by Alan Toon to build this early F/A-18A from VFA-113.

suitable for most modelers in this scale. Further, the decals do not accurately represent the details in the real Hornet cockpit. Additional detailing will also be required for the ejection seat. A large bulge is present in the middle of the cockpit floor, and this is not on the actual aircraft. It would take a lot of work in the cockpit area to make it look right.

The vertical tails indicate an early production F/A-18A, and they lack the external braces added to the real aircraft. There are no LEX fences either, since the model was released before these features were added. In updating their model from the original FSD aircraft, Revell failed to add the antenna fairings under the intakes that are present on F/A-18A (and B) aircraft. Likewise, the countermeasures dispensers are also missing.

The wheel wells are "busy" but do not accurately match the details of the actual aircraft. The struts and wheels are not as nicely done as they are on the Hasegawa and Monogram kits. Fit is about average for other kits that try to reproduce the Hornets complex lines and shapes in plastic. Special attention and a lot of filling and sanding will be required where the upper and lower wing pieces join, around the intake, between the upper and lower fuselage halves, and where the LEX meets the forward fuselage.

The only weapons provided in any of the kits except 4530 are two Sidewinders and two Sparrows. Although the box art for kit 4561 shows a fuel tank on the centerline pylon, it is not present in the kit. In kit 4530 there are four wing pylons and a centerline pylon with a fuel tank. The pylons and the tank are very inaccurate. Two of the wing pylons have MERs molded on them, and they too are not even close to being accurate. Eight inaccurate 500-pound bombs are provided for these racks. AGM-84 Harpoon missiles are included for the other underwing pylons. Although these are better than the bombs, they still are not recommended for the serious scale modeler.

Alan Toon contributed to this review.

1/32nd SCALE KITS

As of this writing, there are no kits of any version of production F/A-18 Hornets available. Hasegawa and Revell both issued 1/32nd scale models of single-seat FSD Hornet, but it would take many long hours of work to update either of these to production standards. John Ficklen built such a model for the 1993 IPMS National Convention doing all of the additional work from scratch.



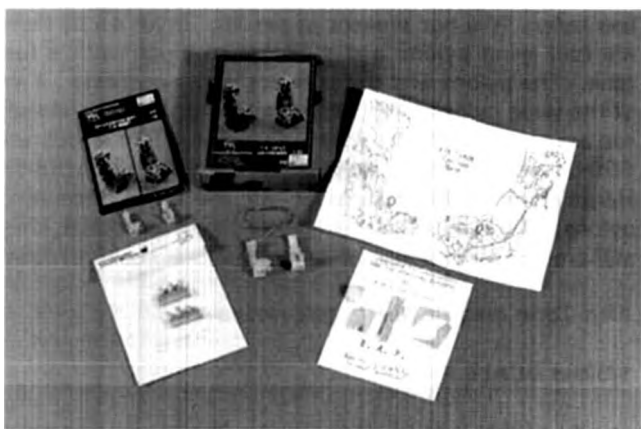
As of this writing, there are no kits in 1/32nd scale of production Hornets. John Ficklen spent many hours updating Hasegawa's 1/32nd scale model of the FSD Hornet to build this model of an F/A-18C from VFA-37.

Hopefully, a kit manufacturer will soon produce a quality model of a production Hornet in this large scale.

ACCESSORIES

Quite a few modeling accessories have been produced for use with the various Hornet kits. Ejection seats are available in 1/144th scale from Commander Series Models. Verlinden makes nice seats for Hornet models in 1/72nd and 1/48th scales, and B. A. P. makes a 1/32nd scale seat.

Airwaves has two sets of photoetched brass parts in both 1/72nd and 1/48th scales. In the cockpit set in each scale, LEX fences are also provided. The canopy set in both scales includes several sets of louvers for vents on the exterior of the aircraft. Eduard has three photoetched brass sets in 1/48th scale. One is for the cockpit only, a second has cockpit parts, LEX fences, braces for the vertical tail, a boarding ladder, countermeasures dispensers, and other smaller parts, and a third has a nice radar.



Hornet ejection seats are available in all four major modeling scales. At the bottom left are 1/144th scale seats from Commander Series Models. At the top left are Verlinden's seats in 1/72nd scale, while at top center are their 1/48th scale seats. B. A. P. makes the 1/32nd scale seat shown at right.

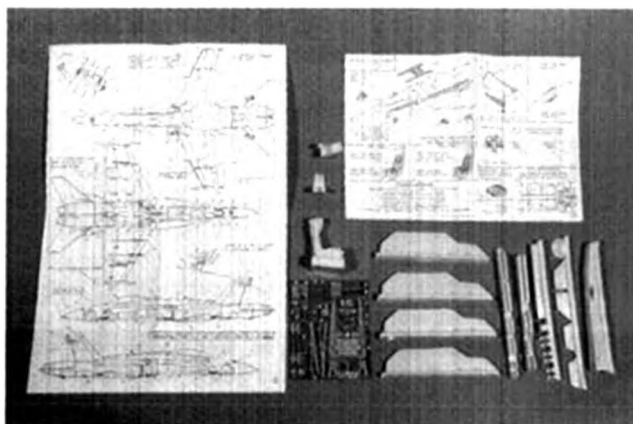


Photoetched detailing sets by Eduard and Airwaves can be seen in this photograph. In the middle of the bottom row is a boarding ladder kit from P. P. Aeroparts.

P. P. Aeroparts has a photoetched boarding ladder in 1/72nd scale. They also make a boarding ladder in 1/48th scale but it is a combination of photoetched metal, cast white metal, and metal rods. Club Model has released a 1/72nd scale cockpit placard for the Hornet.

High Flight issued a resin kit for Hasegawa's 1/72nd scale Hornets that provides wings with the leading and trailing edge flaps in the lowered position. Verlinden makes very detailed update sets for the Hornet in 1/72nd and 1/48th scales, however these are very expensive. Yellow Hammer has a LEX kit and a flap kit in 1/48th scale, as explained in the review of the Monogram kit.

The newest accessory for Hornets is from Xtra Parts. Kit XP3203 converts the Hasegawa 1/32nd scale FSD model to a production F/A-18A, F/A-18C, or CF-18 Hornet. This extensive kit provides all of the necessary updates in the form of resin parts and photoetched metal. It even includes a new ejection seat and a set of pylons. Extensive and detailed instructions show where every part should go. This kit will save the modeler a lot of time when updating the FSD model to a production Hornet, but much work will still be required.



Xtra Parts has released this excellent kit that converts the Hasegawa 1/32nd scale FSD Hornet to an F/A-18A, F/A-18C, or CF-18A. It will save the modeler hours of work as compared to converting the kit from scratch.

DECAL LISTING

MANUFACTURER AND SHEET NUMBER	SCALE	TYPE	UNIT	TAIL CODE	MODEX	COMMENTS
Arrow Graphics A-6-144	1/144th	CF-18A	425 Squadron	None	None	William Tell, 1986 markings
Arrow Graphics A-7-144	1/144th	CF-18A	439 Squadron	None	None	Gulf War, 1991 markings
Arrow Graphics B-60-144	1/144th	Provides nose numbers, false canopies, and Gulf War markings for various Canadian Squadrons				
Arrow Graphics B-65-144	1/144th	CF-18A	410 Squadron	None	None	Fiftieth anniversary scheme and markings
Arrow Graphics C-54-72	1/72nd	CF-18A	425 Squadron	None	None	William Tell, 1986 markings
Arrow Graphics C-55-72	1/72nd	CF-18A	439 Squadron	None	None	Gulf War, 1991 markings
Arrow Graphics C-56-72	1/72nd	Provides nose numbers and Gulf War markings for various Canadian squadrons				
Arrow Graphics B-61-72	1/72nd	Provides false canopies for Canadian Hornets				
Arrow Graphics D-16-72	1/72nd	CF-18A	410 Squadron	None	None	Fiftieth anniversary scheme and markings
IPMS/Canada (No Number) Provides markings for a Canadian CF-18A from 410 "Cougar" Squadron in 1/72nd, 1/48th, and 1/32nd scale						
Propacteam 05-72-005	1/72nd	F/A-18A	VFA-132	AE	300	CAG markings, USS FORRESTAL
Repli-Scale 72-1013	1/72nd	F/A-18A	VMFA-251	DW	03	USS AMERICA
		F/A-18C	VFA-82	AB	310	
Repli-Scale 72-1016	1/72nd	F/A-18A	VFA-305	ND	505	Modex and tail number on right side are incorrect on the instruction sheet.
		F/A-18A	VFA-303	ND	303	
		F/A-18A	VFA-132	AK	200	
Repli-Scale 72-1017	1/72nd	F/A-18A	VMFA-312	DR	07	
		F/A-18A	VMFA-451	VM	00	
Repli-Scale 72-1032	1/72nd	F/A-18C	VFA-81	AA	401	Gulf War MiG-21 kill marking
		F/A-18C	VFA-81	AA	410	Gulf War MiG-21 kill marking
		F/A-18C	VFA-81	AA	403	Shot down during Gulf War
Repli-Scale 72-1038	1/72nd	F/A-18D	VMFA (AW)-121	VK	---	Provides alternate markings for seven aircraft from this squadron as used in Operation Desert Storm
		F/A-18D	VMFA (AW)-242	DT	---	Provides alternate markings for four aircraft from this sqadron
		F/A-18D	VMFAT-101	SH	160	
Repli-Scale 72-1040	1/72nd	F/A-18A	VMFA-531	EC	---	Provides markings for aircraft 05 and 06 from this squadron
		F/A-18A	VMFA-323	WS	---	Provides markings for aircraft 01 and 05 from this squadron
		F/A-18C	VMFA-314	VW	---	Provides markings for six aircraft from this squadron as used in Operation Desert Storm
SuperScale 72-413	1/72nd	F/A-18A	VMFA-323	WS	02	Two A-6E Intruders are also on this sheet. Instructions incorrectly show instrumentation booms on the two Hornets.
		F/A-18A	VMFA-314	VW	000	
SuperScale 72-457	1/72nd	CF-18A	410 Squadron	None	None	USS CONSTELLATION Should also have an NK tail code
		F/A-18A	VMFA-531	EC	02	
		F/A-18A	VFA-25	NK	400	
		F/A-18A	VFA-113	None	303	
SuperScale 72-467	1/72nd	Provides stencil data for F/A-18 Hornets. However, it has only half of the required wing tip light panels				
SuperScale 72-494	1/72nd	F/A-18A	VFA-131	AK	106	USS CORAL SEA
		F/A-18A	VFA-132	AK	203	USS CORAL SEA
		CF-18A	409 Squadron	None	None	
SuperScale 72-540	1/72nd	F/A-18A	VFA-132	AK	200	All four Hornets on this sheet have markings from the raids on Libya during Operation Prairie Fire. These four squadrons operated from the USS CORAL SEA during these raids
		F/A-18A	VFA-131	AK	101	
		F/A-18A	VFA-314	AK	301	
		F/A-18A	VMFA-323	AK	407	
SuperScale 72-550	1/72nd	F/A-18A	VFA-25	NK	412	
		F/A-18A	VFA-195	NM	401	
		F/A-18A	VMFA-122	DC	00	
SuperScale 72-551	1/72nd	F/A-18A	VFA-151	NF	202	USS MIDWAY
		F/A-18A	VFA-161	NF	101	
		F/A-18A	VFA-192	NF	307	

MANUFACTURER AND SHEET NUMBER	SCALE	TYPE	UNIT	TAIL CODE	MODEX	COMMENTS
SuperScale 72-560	1/72nd	Provides markings for Blue Angels aircraft 1 through 6 from 1987				
SuperScale 72-564	1/72nd	F/A-18A	VFA-15	AC	307	Aircraft should have MARINES on right side of fuselage.
		F/A-18A	VFA-87	AC	400	
		F/A-18A	VFA-106	AD	332	
SuperScale 72-565	1/72nd	F/A-18A	VFA-136	AK	303	SWC stands for Strike Warfare Center
		F/A-18A	VFA-137	AK	402	
		F/A-18A	SWC	None	05	
SuperScale 72-575	1/72nd	F/A-18A	VFA-83	AA	301	
		F/A-18A	VFA-82	AB	300	
		F/A-18A	VMFA-312	DR	10	
SuperScale 72-578	1/72nd	F/A-18A	VFA-305	ND	505	
		F/A-18A	VFA-132	AK	201	
		F/A-18A	VFA-303	ND	303	
SuperScale 72-592	1/72nd	F/A-18A	VFA-137	AK	400	
		F/A-18A	VX-4	XF	11	
		CF-18A	439 Squadron	None	None	
SuperScale 72-593	1/72nd	F/A-18A	VFA-113	NK	300	Black vertical tails with colorful CAG markings.
		F/A-18A	VFA-81	AA	405	
		CF-18A	421 Squadron	None	None	
SuperScale 72-602	1/72nd	F/A-18A	VFA-136	AG	300	
		F/A-18A	VFA-131	AA	100	
		F/A-18A	VFA-87	AJ	400	
SuperScale 72-606	1/72nd	F/A-18A	VFA-132	AK	200	AA tail code is missing. USS SARATOGA
		F/A-18C	VFA-81	---	400	
SuperScale 72-620	1/72nd	F/A-18C	VFA-25	NK	400	Black vertical tails with colorful CAG markings. Desert Shield USS INDEPENDENCE, F-14A, A-6E, & EA-6B also on sheet.
SuperScale 72-632	1/72nd	F/A-18A	VMFA-451	VM	12	Desert Storm MiG-21 Killer USS NIMITZ
		F/A-18C	VFA-81	AA	410	
		F/A-18C	VFA-146	NG	307	
SuperScale 72-633	1/72nd	F/A-18C	VFA-83	AA	306	USS SARATOGA
		F/A-18A	VFA-203	AF	313	
		F/A-18C	VFA-105	AC	400	
SuperScale 72-651	1/72nd	F/A-18D	VMFA (AW)-121	VK	14	
		F/A-18D	VMFA (AW)-242	DT	02	
		F/A-18D	VMFAT-101	SH	161	
SuperScale 72-652	1/72nd	F/A-18C	VFA-37	AC	307	USS JOHN F. KENNEDY USS ABRAHAM LINCOLN
		F/A-18C	VFA-94	NH	411	
		F/A-18C	VMFAT-101	SH	102	
SuperScale 72-677	1/72nd	F/A-18C	VFA-136	AG	300	USS GEORGE WASHINGTON
		F/A-18C	VMFA-323	WA	01	
Arrow Graphics E-13-48	1/48th	CF-18A	425 Squadron	None	None	William Tell, 1986 markings
Arrow Graphics E-14-48	1/48th	CF-18A	439 Squadron	None	None	Gulf War, 1991 markings
Arrow Graphics E-15-48	1/48th	CF-18A	Provides nose numbers and Gulf War markings for various Canadian markings			
Arrow Graphics C-57-48	1/48th	CF-18A	Provides false canopies for Canadian Hornets			
Arrow Graphics F-4-48	1/48th	CF-18A	410 Squadron	None	None	Fiftieth anniversary scheme and markings
Repli-Scale 48-5013	1/48th	Provides markings for the same two aircraft as listed above for sheet 72-1013				
Repli-Scale 48-5016	1/48th	Provides markings for the same three aircraft as listed above for sheet 72-1016				
Repli-Scale 48-5017	1/48th	Provides markings for the same two aircraft as listed above for sheet 72-1017				
Repli-Scale 48-5032	1/48th	Provides markings for the same three aircraft as listed above for sheet 72-1032				

MANUFACTURER AND SHEET NUMBER	SCALE	TYPE	UNIT	TAIL CODE	MODEX	COMMENTS	
Repli-Scale 48-5038	1/48th	Provides markings for the same three aircraft as listed above for sheet 72-1038					
Repli-Scale 48-5040	1/48th	Provides markings for the same three aircraft as listed above for sheet 72-1040					
SuperScale 48-237	1/48th	F/A-18A	VMFA-531	EC	02	Should also have an NK tail code	
		F/A-18A	VMFA-531	EC	16		
		F/A-18A	VFA-25	NK	200		
		F/A-18A	VFA-113	None	303		
SuperScale 48-246	1/48th	Provides stencil data for F/A-18 Hornets. However, it has only half of the required wing tip lights panels.					
SuperScale 48-274	1/48th	F/A-18A	VFA-132	AK	203		
		F/A-18A	VFA-131	AK	106		
		CF-18A	409 Squadron	None	None		
SuperScale 48-313	1/48th	Provides markings for the same four aircraft as listed above for sheet 72-540					
SuperScale 48-321	1/48th	Provides markings for the same three aircraft as listed above for sheet 72-550					
SuperScale 48-322	1/48th	Provides markings for the same three aircraft as listed above for sheet 72-551					
SuperScale 48-329	1/48th	Provides markings for Blue Angels aircraft 1 through 6 from 1987					
SuperScale 48-331	1/48th	Provides markings for the same three aircraft as listed above for sheet 72-564					
SuperScale 48-333	1/48th	Provides markings for the same three aircraft as listed above for sheet 72-565					
SuperScale 48-343	1/48th	Provides markings for the same three aircraft as listed above for sheet 72-575					
SuperScale 48-346	1/48th	Provides markings for the same three aircraft as listed above for sheet 72-578					
SuperScale 48-361	1/48th	Provides markings for the same three aircraft as listed above for sheet 72-593					
SuperScale 48-377	1/48th	F/A-18A	VFA-132	AK	200		
		F/A-18A	VFA-136	AG	300		
SuperScale 48-378	1/48th	F/A-18C	VFA-81	---	400	AA tail code is missing.	
		F/A-18A	VFA-131	AA	100		
		F/A-18A	VFA-87	AJ	400		
SuperScale 48-404	1/48th	Provides markings for the same aircraft as listed above for sheet 72-620					
SuperScale 48-417	1/48th	Provides markings for the same three aircraft as listed above for sheet 72-632					
SuperScale 48-418	1/48th	Provides markings for the same three aircraft as listed above for sheet 72-633					
SuperScale 48-440	1/48th	Provides markings for the same three aircraft as listed above for sheet 72-652					
SuperScale 48-473	1/48th	Provides markings for the same two aircraft as listed above for sheet 72-677					
Arrow Graphics G-3-32	1/32nd	CF-18A	425 Squadron	None	None	William Tell, 1986 markings	
Arrow Graphics G-2-32	1/32nd	CF-18A	439 Squadron	None	None	Gulf War, 1991 markings	
Arrow Graphics G-4-32	1/32nd	Provides nose numbers and Gulf War markings for various Canadian squadrons					
Arrow Graphics E-12-32	1/32nd	Provides false canopies for Canadian Hornets					
Arrow Graphics L-1-32	1/32nd	CF-18A	410 Squadron	None	None	Fiftieth anniversary scheme and markings	
SuperScale 32-048	1/32nd	Provides stencil data for F/A-18 Hornets. However, it has only half of the required wing tip light panels.					
SuperScale 32-059	1/32nd	Provides markings for the same three aircraft as listed above for sheet 72-550					
SuperScale 32-060	1/32nd	Provides markings for the same three aircraft as listed above for sheet 72-551					
SuperScale 32-070	1/32nd	Provides markings for Blue Angels aircraft number 1 from 1987					
SuperScale 32-072	1/32nd	Provides markings for the same three aircraft as listed above for sheet 72-564					
SuperScale 32-073	1/32nd	Provides markings for the same three aircraft as listed above for sheet 72-565					

MANUFACTURER AND SHEET NUMBER	SCALE	TYPE	UNIT	TAIL CODE	MODEX	COMMENTS
SuperScale 32-076	1/32nd	F/A-18C F/A-18C	VFA-83 VFA-82	AA AB	301 300	
SuperScale 32-078	1/32nd	Provides markings for the same three aircraft as listed above for sheet 72-578				
SuperScale 32-083	1/32nd	F/A-18A F/A-18A	VFA-137 VX-4	AK XF	400 11	
SuperScale 32-084	1/32nd	F/A-18A F/A-18A	VFA-113 VFA-81	NK AA	300 405	Black vertical tails with colorful CAG markings
SuperScale 32-090	1/32nd	F/A-18A F/A-18C	VFA-87 VFA-81	AJ ---	400 400	AA tail code is missing. USS SARATOGA
SuperScale 32-091	1/32nd	F/A-18A F/A-18A	VFA-131 VFA-136	AA AG	100 300	
SuperScale 32-094	1/32nd	F/A-18A	VFA-132	AK	200	
SuperScale 32-104	1/32nd	F/A-18C	VFA-25	NK	400	Black vertical tails with colorful CAG markings. Desert Shield Sheet also has markings for and F-14 Tomcat.
SuperScale 32-114	1/32nd	F/A-18C	VMFA-451	VM	12	
SuperScale 32-115	1/32nd	F/A-18A F/A-18C	VFA-203 VFA-83	AF AA	313 306	
SuperScale 32-124	1/32nd	F/A-18C	VFA-37	AC	307	USS JOHN F. KENNEDY
SuperScale 32-130	1/32nd	F/A-18C	VFA-136	AG	300	BuNo. 164209 is missing from the sheet.

NOTES:

1. This listing represents decals that were generally available as of April 1994 as indicated in various catalogs, manufacturer's advertising, and samples provided to Detail & Scale, Inc.

2. Although SuperScale provides a considerable number of decals for production Hornets in 1/32nd scale, it should be noted that as of July 1994, there are no models of production Hornets in this scale. No such models have been announced by any kit manufacturer. Considerable work would be required to convert a 1/32nd scale Hasegawa or Revell FSD Hornet to a production F/A-18A or an F/A-18C. This work would also require a very skilled modeler.



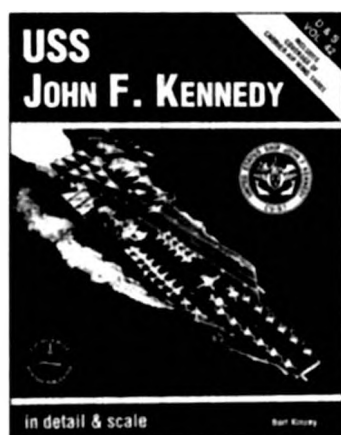
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